TRANS-CANADA PIPE LINES LIMITED

Summary of Gas Reserves as of November 1, 1957 (Contracts as of February 23, 1958).

(All Volumes in Millions of Cubic Feet and Measured at 14.4 p.s.i.a. and 60 degrees Fahrenheit except as otherwise noted.)

	Estimated Total Gas Reserves of Fields from which Trans-Canada Pipe Lines Limited has contracted for its gas supply.			Estimated Gas Reserves Under Contract to Trans-Canada Pipe Lines Limited.		
Field	Proved	Probable	Total	Proved	Probable	Total
Atlee-Buffalo	87,968	20,212	108,180	82,701	16,598	99,299
Bindloss	236,153	4,603	240,756	178,639	4,353	182,992
Cessford	1,045,394	334,553	1,379,947	898,937	215,941	1,114,878
Countess-Duchess	68,495	100,090	168,585	68,320	97,274	165,594
Gilby	335,485	81,222	416,707	(1) 200,002	40,179	240,181
Homeglen-Rimbey	796,863	88,833	885,696	(1) 594,870	69,935	664,805
Hussar Area	144,724	668	145,392	130,024	668	130,692
Kessler	29,142	8,071	37,213	28,055	5,468	33,523
Nevis	479,113	70,714	549,827	(1) 416,505	33,830	450,335
Oyen	21,715	5,909	27,624	21,714	3,673	25,387
Pincher Creek	1,137,139	515,992	1,653,131	1,137,139	244,498	1,381,637
Princess Area	140,798	50,588	191,386	(1) 82,610	95	82,705
Provost	622,865	130,352	753,217	(1) 515,291	38,888	554,179
Sibbald	47,550	12,352	59,902	41,136	7,568	48,704
Total	5,193,404	1,424,159	6,617,563	4,395,943	778,968	5,174,911
Total at 14.73 p.s.i.a.	5,077,055	1,392,253	6,469,308	4,297,460	761,516	5,058,976
(2) Total Under Permit	5,048,680	1,423,491	6,472,171	4,265,919	778,300	5,044,219
(2) Total Under Permit at 14.73 p.s.i.a.	4,935,573	1,391,600	6,327,173	4,170,349	760,863	4,931,212

(1) Certain contracts limit the quantity of gas reserves dedicated (see detailed summary of contracts by fields.)

(2) Excludes gas reserves from Hussar Area, which is not under Permit to Trans-Canada Pipe Lines Limited.

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TRANS-CANADA PIPE LINES LIMITED

Summary of Gas Reserves as of November 1, 1957 (Contracts as of February 23, 1958).

(All Volumes in Millions of Cubic Feet and Measured at 14.4 p.s.i.a. and 60 degrees Fahrenheit except as otherwise noted.)

Field	Estimated Total Gas Reserves of Fields from which Trans-Canada Pipe Lines Limited has contracted for its gas supply.			Estimated Gas Reserves Under Contract to Trans-Canada Pipe Lines Limited.		
	Proved	Probable	Total	Proved	Probable	Total
Atlee-Buffalo	87,968	20,212	108,180	82,701	16,598	99,299
Bindloss	236,153	4,603	240,756	178,639	4,353	182,992
Cessford	1,045,394	334,553	1,379,947	898,937	215,941	1,114,878
Countess-Duchess	68,495	100,090	168,585	68,320	97,274	165,594
Gilby	335,485	81,222	416,707	(1) 200,002	40,179	240,181
Homeglen-Rimbey	796,863	88,833	885,696	(1) 594,870	69,935	664,805
Hussar Area	144,724	668	145,392	130,024	668	130,692
Kessler	29,142	8,071	37,213	28,055	5,468	33,523
Nevis	479,113	70,714	549,827	(1) 416,505	33,830	450,335
Oyen	21,715	5,909	27,624	21,714	3,673	25,387
Pincher Creek	1,137,139	515,992	1,653,131	1,137,139	244,498	1,381,637
Princess Area	140,798	50,588	191,386	(1) 82,610	95	82,705
Provost	622,865	130,352	753,217	(1) 515,291	38,888	554,179
Sibbald	47,550	12,352	59,902	41,136	7,568	48,704
Total	5,193,404	1,424,159	6,617,563	4,395,943	778,968	5,174,911
Total at 14.73 p.s.i.a.	5,077,055	1,392,253	6,469,308	4,297,460	761,516	5,058,976
(2) Total Under Permit	5,048,680	1,423,491	6,472,171	4,265,919	778,300	5,044,219
(2) Total Under Permit at 14.73 p.s.i.a.	4,935,573	1,391,600	6,327,173	4,170,349	760,863	4,931,212

(1) Certain contracts limit the quantity of gas reserves dedicated (see detailed summary of contracts by fields.)

(2) Excludes gas reserves from Hussar Area, which is not under Permit to Trans-Canada Pipe Lines Limited.

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TRANS-CANADA PIPE LINES LIMITED

Summary by Companies of Gas Purchase Contracts
showing
Estimated Gas Reserves Under Contract and Maximum Daily Contract Volumes

(All Volumes Measured at 14.4 P.S.I.A. and 60 Degrees Fahrenheit Except as Otherwise Noted)

Company and Fields	Gas Reserves M.M.C.F. Proved	Probable	Total	Maximum Daily Volumes M.C.F. 1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
AMUREX OIL COMPANY									
Homeglen-Rimbey	7,344	---------	7,344				630	700	1,000
COMPANY TOTAL	7,344	---------	7,344				630	700	1,000
BAILEY SELBURN OIL & GAS et al									
Bindloss	66,127	---------	66,127	4,850	4,870	4,870	4,875	5,960	8,570
COMPANY TOTAL	66,127	---------	66,127	4,850	4,870	4,870	4,875	5,960	8,570
BARLOW DEVELOPMENT LTD.									
* Provost	1,855	---------	1,855	160	200	240	240	240	250
COMPANY TOTAL	1,855	---------	1,855	160	200	240	240	240	250
THE BRITISH AMERICAN OIL CO.									
Gilby	63,297	32,427	95,724				2,000	2,359	2,671
Homeglen-Rimbey	115,803	33,499	149,302				9,470	10,640	15,100
Nevis	123,792	11,601	135,393			11,000	11,800	13,900	15,750
Pincher Creek	1,137,139	244,498	1,381,637		100,000	125,000	125,000	160,000	160,000
COMPANY TOTAL	1,440,031	322,025	1,762,056		100,000	136,000	148,270	186,899	193,521

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Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
THE CALIFORNIA STANDARD CO.									
# Gilby	40,581	---------	40,581				3,150	3,675	4,175
# Homeglen-Rimbey	279,670	---------	279,670				24,100	27,100	38,300
* Homeglen-Rimbey	54,902	33,101	88,003				10,000	10,000	10,000
# Nevis	90,099	1,941	92,040			7,850	8,375	9,850	11,200
# Princess-Patricia	82,610	95	82,705		7,000	6,800	7,600	8,600	9,700
# Provost	20,727	---------	20,727	1,800	2,300	2,700	2,700	2,700	2,800
COMPANY TOTAL	568,589	35,137	603,726	1,800	9,300	17,350	55,925	61,925	76,175
CALVAN CONS. OIL & GAS CO.									
Provost	60,310	959	61,269	5,200	6,600	7,800	7,800	7,800	8,100
COMPANY TOTAL	60,310	959	61,269	5,200	6,600	7,800	7,800	7,800	8,100
CANADA OIL LANDS									
Provost	508	---------	508	45	55	65	65	65	70
COMPANY TOTAL	508	---------	508	45	55	65	65	65	70
CANADIAN DELHI OIL LTD.									
Cessford	366,143	94,841	460,984		41,680	47,590	47,600	47,600	48,220
Countess-Duchess	18,053	17,788	35,841				1,670	1,773	2,372
Countess-Duchess (Sun Oil)	9,752	18,958	28,710				907	963	1,288
Provost	13,364	1,376	14,740	1,140	1,460	1,730	1,730	1,730	1,800
COMPANY TOTAL	407,312	132,963	540,275	1,140	43,140	49,320	51,907	52,066	53,680
CANADIAN EXPORT GAS LTD.									
Countess-Duchess (Sun & Merrill)	4,711	8,676	13,387				435	462	619
COMPANY TOTAL	4,711	8,676	13,387				435	462	619
CANADIAN EXPORT GAS et al									
Atlee-Buffalo	82,701	16,598	99,299		8,650	8,450	9,000	10,600	12,000
COMPANY TOTAL	82,701	16,598	99,299		8,650	8,450	9,000	10,600	12,000

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
CANADIAN EXPORT GAS et al									
Bindloss	110,597	4,353	114,950	8,000	8,060	8,060	8,060	9,860	14,170
COMPANY TOTAL	110,597	4,353	114,950	8,000	8,060	8,060	8,060	9,860	14,170
CANADIAN EXPORT GAS et al									
Cessford	123,703	4,088	127,791		14,080	16,080	16,080	16,080	16,290
COMPANY TOTAL	123,703	4,088	127,791		14,080	16,080	16,080	16,080	16,290
CANADIAN OIL COMPANIES									
Homeglen-Rimbey	24,099	---------	24,099				2,360	2,660	3,760
COMPANY TOTAL	24,099	---------	24,099				2,360	2,660	3,760
CANADIAN PIPE. & PET. LTD.									
Gilby	9,302	1,946	11,248				424	500	566
Nevis	6,501	---------	6,501			550	590	700	790
COMPANY TOTAL	15,803	1,946	17,749			550	1,014	1,200	1,356
CANADIAN SEABOARD OIL CO.									
# Gilby	11,291	---------	11,291				843	1,000	1,127
COMPANY TOTAL	11,291	---------	11,291				843	1,000	1,127
CANADIAN SUPERIOR OIL OF CAL.									
Gilby	12,074	3,603	15,677				670	790	890
Nevis	19,186	1,499	20,685			2,170	2,320	2,730	3,100
COMPANY TOTAL	31,260	5,102	36,362			2,170	2,990	3,520	3,990
DOME EXPLORATION (WEST.)									
Provost	100,615	8,716	109,331	8,400	10,700	12,700	12,700	12,700	13,200
COMPANY TOTAL	100,615	8,716	109,331	8,400	10,700	12,700	12,700	12,700	13,200

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
FARGO OILS LTD.									
Cessford	1,244	838	2,082		19	22	22	22	22
COMPANY TOTAL	1,244	838	2,082		19	22	22	22	22
HOME OIL COMPANY									
Nevis	123,957	11,067	135,024			10,400	11,000	13,000	14,760
COMPANY TOTAL	123,957	11,067	135,024			10,400	11,000	13,000	14,760
HONOLULU OIL CORPORATION									
# Gilby	11,291	---------	11,291				843	1,000	1,127
COMPANY TOTAL	11,291	---------	11,291				843	1,000	1,127
HUDSON'S BAY OIL & GAS CO.									
* Bindloss	1,915	---------	1,915	150	150	150	150	180	260
Cessford	402,194	115,592	517,786		46,250	52,800	52,800	52,800	53,500
Gilby	40,875	2,203	43,078				1,500	1,800	2,020
Homeglen-Rimbey	7,461	2,386	9,847				620	700	1,000
Kessler	4,757	1,375	6,132				603	641	840
Nevis	5,415	2,365	7,780			430	460	550	620
Oyen	11,344	2,135	13,479		1,010	975	1,044	1,218	1,393
Provost	27,096	1,588	28,684	2,285	2,900	3,450	3,450	3,450	3,585
COMPANY TOTAL	501,057	127,644	628,701	2,435	50,310	57,805	60,627	61,339	63,218
IMPERIAL OIL LIMITED									
Homeglen-Rimbey	60,269	847	61,116				5,340	6,000	8,480
Nevis	11,348	2,344	13,692			890	950	1,120	1,260
Provost	285,668	25,999	311,667	24,500	31,200	36,900	36,900	36,900	38,400
COMPANY TOTAL	357,285	29,190	386,475	24,500	31,200	37,790	43,190	44,020	48,140

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
LINCOLN-McKAY DEV. CO.									
* Provost	1,855	---------	1,855	160	200	240	240	240	250
COMPANY TOTAL	1,855	---------	1,855	160	200	240	240	240	250
MERRILL HOLDINGS LTD.									
# Gilby	4,516	---------	4,516				337	400	451
COMPANY TOTAL	4,516	---------	4,516				337	400	451
MERRILL PETROLEUMS LTD.									
Countess-Duchess (Sun & Can. Ex.)	4,711	8,676	13,387				436	463	619
# Gilby	6,775	---------	6,775				506	600	676
Provost	508	---------	508	45	55	65	65	65	70
COMPANY TOTAL	11,994	8,676	20,670	45	55	65	1,007	1,128	1,365
MILL CITY PETROLEUMS et al									
Kessler	23,298	4,093	27,391				2,698	2,864	3,757
COMPANY TOTAL	23,298	4,093	27,391				2,698	2,864	3,757
NEW SUPERIOR OILS OF CAN.									
Nevis	35,291	2,965	38,256			2,880	3,080	3,630	4,100
COMPANY TOTAL	35,291	2,965	38,256			2,880	3,080	3,630	4,100
THE OHIO OIL COMPANY									
Oyen	10,370	1,538	11,908		920	890	950	1,110	1,270
COMPANY TOTAL	10,370	1,538	11,908		920	890	950	1,110	1,270
PACIFIC PETROLEUMS LTD.									
Provost	2,785	250	3,035	240	305	360	360	360	375
	2,785	250	3,035	240	305	360	360	360	375

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
ROYALITE OIL CO., LTD.									
Cessford	5,653	582	6,235		418	477	477	477	484
COMPANY TOTAL	5,653	582	6,235		418	477	477	477	484
R.I. SMITH									
Countess-Duchess (Sun Oil)	5,960	3,434	9,394				551	586	783
COMPANY TOTAL	5,960	3,434	9,394				551	586	783
SUN OIL COMPANY									
Countess-Duchess (Can. Delhi)	9,752	18,957	28,709				906	962	1,287
Countess-Duchess (Merrill & Can Ex.)	9,422	17,352	26,774				872	926	1,238
Countess-Duchess (R.I. Smith)	5,959	3,433	9,392				551	585	783
Nevis	916	48	964			360	390	450	520
COMPANY TOTAL	26,049	39,790	65,839			360	2,719	2,923	3,828
SUN OIL COMPANY et al									
Sibbald	41,136	7,568	48,704		3,600	3,500	3,750	4,400	5,000
COMPANY TOTAL	41,136	7,568	48,704		3,600	3,500	3,750	4,400	5,000
TENNESSEE GAS TRANSMISSION									
Hussar Area	130,024	668	130,692		16,000	16,000	16,000	16,000	16,000
COMPANY TOTAL	130,024	668	130,692		16,000	16,000	16,000	16,000	16,000
WESTERN DECALTA PET. et al									
Homeglen-Rimbey	45,322	102	45,424				2,880	3,224	4,560
COMPANY TOTAL	45,322	102	45,424				2,880	3,224	4,560

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
Total (Price Schedule #1)	4,335,416	745,867	5,081,283	56,505	308,132	393,814	463,295	519,800	566,608
*Total (Price Schedule #2)	60,527	33,101	93,628	470	550	630	10,630	10,660	10,760
GRAND TOTAL	4,395,943	778,968	5,174,911	56,975	308,682	394,444	473,925	530,460	577,368
Total (Price Schedule #1) @ 14.73 p.s.i.a.	4,238,288	729,157	4,967,445	55,239	301,229	384,991	452,916	508,155	553,914
*Total (Price Schedule #2) @ 14.73 p.s.i.a.	59,172	32,359	91,531	460	538	616	10,392	10,421	10,519
GRAND TOTAL @ 14.73 p s.i a.	4,297,460	761,516	5,058,976	55,699	301,767	385,607	463,308	518,576	564,433

Note:-

Contracted price in accordance with Price Schedule #1, unless otherwise noted

* Contracted price in accordance with Price Schedule #2.

\# Reserves in accordance with quantity limitation in contract

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TRANS-CANADA PIPE LINES LIMITED

Summary by Companies of Gas Purchase Contracts
showing
Estimated Gas Reserves Under Contract and Maximum Daily Contract Volumes

(All Volumes Measured at 14.4 P S I A and 60 Degrees Fahrenheit Except as Otherwise Noted)

Company and Fields	Gas Reserves M.M.C.F			Maximum Daily Volumes M.C.F.					
	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
AMUREX OIL COMPANY									
Homeglen-Rimbey	7,344	---------	7,344				630	700	1,000
COMPANY TOTAL	7,344	---------	7,344				630	700	1,000
BAILEY SELBURN OIL & GAS et al									
Bindloss	66,127	---------	66,127	4,850	4,870	4,870	4,875	5,960	8,570
COMPANY TOTAL	66,127	---------	66,127	4,850	4,870	4,870	4,875	5,960	8,570
BARLOW DEVELOPMENT LTD.									
* Provost	1,855	---------	1,855	160	200	240	240	240	250
COMPANY TOTAL	1,855	---------	1,855	160	200	240	240	240	250
THE BRITISH AMERICAN OIL CO.									
Gilby	63,297	32,427	95,724				2,000	2,359	2,671
Homeglen-Rimbey	115,803	33,499	149,302				9,470	10,640	15,100
Nevis	123,792	11,601	135,393			11,000	11,800	13,900	15,750
Pincher Creek	1,137,139	244,498	1,381,637		100,000	125,000	125,000	160,000	160,000
COMPANY TOTAL	1,440,031	322,025	1,762,056		100,000	136,000	148,270	186,899	193,521

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
THE CALIFORNIA STANDARD CO									
# Gilby	40,581	---------	40,581				3,150	3,675	4,175
# Homeglen-Rimbey	279,670	---------	279,670				24,100	27,100	38,300
* Homeglen-Rimbey	54,902	33,101	88,003				10,000	10,000	10,000
# Nevis	90,099	1,941	92,040			7,850	8,375	9,850	11,200
# Princess-Patricia	82,610	95	82,705		7,000	6,800	7,600	8,600	9,700
# Provost	20,727	---------	20,727	1,800	2,300	2,700	2,700	2,700	2,800
COMPANY TOTAL	568,589	35,137	603,726	1,800	9,300	17,350	55,925	61,925	76,175
CALVAN CONS. OIL & GAS CO.									
Provost	60,310	959	61,269	5,200	6,600	7,800	7,800	7,800	8,100
COMPANY TOTAL	60,310	959	61,269	5,200	6,600	7,800	7,800	7,800	8,100
CANADA OIL LANDS									
Provost	508	---------	508	45	55	65	65	65	70
COMPANY TOTAL	508	---------	508	45	55	65	65	65	70
CANADIAN DELHI OIL LTD.									
Cessford	366,143	94,841	460,984		41,680	47,590	47,600	47,600	48,220
Countess-Duchess	18,053	17,788	35,841				1,670	1,773	2,372
Countess-Duchess (Sun Oil)	9,752	18,958	28,710				907	963	1,288
Provost	13,364	1,376	14,740	1,140	1,460	1,730	1,730	1,730	1,800
COMPANY TOTAL	407,312	132,963	540,275	1,140	43,140	49,320	51,907	52,066	53,680
CANADIAN EXPORT GAS LTD									
Countess-Duchess (Sun & Merrill)	4,711	8,676	13,387				435	462	619
COMPANY TOTAL	4,711	8,676	13,387				435	462	619
CANADIAN EXPORT GAS et al									
Atlee-Buffalo	82,701	16,598	99,299		8,650	8,450	9,000	10,600	12,000
COMPANY TOTAL	82,701	16,598	99,299		8,650	8,450	9,000	10,600	12,000

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
CANADIAN EXPORT GAS et al									
Bindloss	110,597	4,353	114,950	8,000	8,060	8,060	8,060	9,860	14,170
COMPANY TOTAL	110,597	4,353	114,950	8,000	8,060	8,060	8,060	9,860	14,170
CANADIAN EXPORT GAS et al									
Cessford	123,703	4,088	127,791		14,080	16,080	16,080	16,080	16,290
COMPANY TOTAL	123,703	4,088	127,791		14,080	16,080	16,080	16,080	16,290
CANADIAN OIL COMPANIES									
Homeglen-Rimbey	24,099	---------	24,099				2,360	2,660	3,760
COMPANY TOTAL	24,099	---------	24,099				2,360	2,660	3,760
CANADIAN PIPE. & PET. LTD.									
Gilby	9,302	1,946	11,248				424	500	566
Nevis	6,501	---------	6,501			550	590	700	790
COMPANY TOTAL	15,803	1,946	17,749			550	1,014	1,200	1,356
CANADIAN SEABOARD OIL CO									
# Gilby	11,291	---------	11,291				843	1,000	1,127
COMPANY TOTAL	11,291	---------	11,291				843	1,000	1,127
CANADIAN SUPERIOR OIL OF CAL.									
Gilby	12,074	3,603	15,677				670	790	890
Nevis	19,186	1,499	20,685			2,170	2,320	2,730	3,100
COMPANY TOTAL	31,260	5,102	36,362			2,170	2,990	3,520	3,990
DOME EXPLORATION (WEST.)									
Provost	100,615	8,716	109,331	8,400	10,700	12,700	12,700	12,700	13,200
COMPANY TOTAL	100,615	8,716	109,331	8,400	10,700	12,700	12,700	12,700	13,200

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
FARGO OILS LTD.									
Cessford	1,244	838	2,082		19	22	22	22	22
COMPANY TOTAL	1,244	838	2,082		19	22	22	22	22
HOME OIL COMPANY									
Nevis	123,957	11,067	135,024			10,400	11,000	13,000	14,760
COMPANY TOTAL	123,957	11,067	135,024			10,400	11,000	13,000	14,760
HONOLULU OIL CORPORATION									
# Gilby	11,291	---------	11,291				843	1,000	1,127
COMPANY TOTAL	11,291	---------	11,291				843	1,000	1,127
HUDSON'S BAY OIL & GAS CO.									
* Bindloss	1,915	---------	1,915	150	150	150	150	180	260
Cessford	402,194	115,592	517,786		46,250	52,800	52,800	52,800	53,500
Gilby	40,875	2,203	43,078				1,500	1,800	2,020
Homeglen-Rimbey	7,461	2,386	9,847				620	700	1,000
Kessler	4,757	1,375	6,132				603	641	840
Nevis	5,415	2,365	7,780			430	460	550	620
Oyen	11,344	2,135	13,479		1,010	975	1,044	1,218	1,393
Provost	27,096	1,588	28,684	2,285	2,900	3,450	3,450	3,450	3,585
COMPANY TOTAL	501,057	127,644	628,701	2,435	50,310	57,805	60,627	61,339	63,218
IMPERIAL OIL LIMITED									
Homeglen-Rimbey	60,269	847	61,116				5,340	6,000	8,480
Nevis	11,348	2,344	13,692			890	950	1,120	1,260
Provost	285,668	25,999	311,667	24,500	31,200	36,900	36,900	36,900	38,400
COMPANY TOTAL	357,285	29,190	386,475	24,500	31,200	37,790	43,190	44,020	48,140

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
LINCOLN-McKAY DEV. CO.									
* Provost	1,855	---------	1,855	160	200	240	240	240	250
COMPANY TOTAL	1,855	---------	1,855	160	200	240	240	240	250
MERRILL HOLDINGS LTD.									
# Gilby	4,516	---------	4,516				337	400	451
COMPANY TOTAL	4,516	---------	4,516				337	400	451
MERRILL PETROLEUMS LTD									
Countess-Duchess (Sun & Can. Ex.)	4,711	8,676	13,387				436	463	619
# Gilby	6,775	---------	6,775				506	600	676
Provost	508	---------	508	45	55	65	65	65	70
COMPANY TOTAL	11,994	8,676	20,670	45	55	65	1,007	1,128	1,365
MILL CITY PETROLEUMS et al									
Kessler	23,298	4,093	27,391				2,698	2,864	3,757
COMPANY TOTAL	23,298	4,093	27,391				2,698	2,864	3,757
NEW SUPERIOR OILS OF CAN									
Nevis	35,291	2,965	38,256			2,880	3,080	3,630	4,100
COMPANY TOTAL	35,291	2,965	38,256			2,880	3,080	3,630	4,100
THE OHIO OIL COMPANY									
Oyen	10,370	1,538	11,908		920	890	950	1,110	1,270
COMPANY TOTAL	10,370	1,538	11,908		920	890	950	1,110	1,270
PACIFIC PETROLEUMS LTD									
Provost	2,785	250	3,035	240	305	360	360	360	375
	2,785	250	3,035	240	305	360	360	360	375

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
ROYALITE OIL CO., LTD.									
Cessford	5,653	582	6,235		418	477	477	477	484
COMPANY TOTAL	5,653	582	6,235		418	477	477	477	484
R.I. SMITH									
Countess-Duchess (Sun Oil)	5,960	3,434	9,394				551	586	783
COMPANY TOTAL	5,960	3,434	9,394				551	586	783
SUN OIL COMPANY									
Countess-Duchess (Can. Delhi)	9,752	18,957	28,709				906	962	1,287
Countess-Duchess (Merrill & Can Ex.)	9,422	17,352	26,774				872	926	1,238
Countess-Duchess (R.I. Smith)	5,959	3,433	9,392				551	585	783
Nevis	916	48	964			360	390	450	520
COMPANY TOTAL	26,049	39,790	65,839			360	2,719	2,923	3,828
SUN OIL COMPANY et al									
Sibbald	41,136	7,568	48,704		3,600	3,500	3,750	4,400	5,000
COMPANY TOTAL	41,136	7,568	48,704		3,600	3,500	3,750	4,400	5,000
TENNESSEE GAS TRANSMISSION									
Hussar Area	130,024	668	130,692		16,000	16,000	16,000	16,000	16,000
COMPANY TOTAL	130,024	668	130,692		16,000	16,000	16,000	16,000	16,000
WESTERN DECALTA PET. et al									
Homeglen-Rimbey	45,322	102	45,424				2,880	3,224	4,560
COMPANY TOTAL	45,322	102	45,424				2,880	3,224	4,560

Company and Fields	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
Total (Price Schedule #1)	4,335,416	745,867	5,081,283	56,505	308,132	393,814	463,295	519,800	566,608
*Total (Price Schedule #2)	60,527	33,101	93,628	470	550	630	10,630	10,660	10,760
GRAND TOTAL	4,395,943	778,968	5,174,911	56,975	308,682	394,444	473,925	530,460	577,368
Total (Price Schedule #1) @ 14.73 p.s.i.a.	4,238,288	729,157	4,967,445	55,239	301,229	384,991	452,916	508,155	553,914
*Total (Price Schedule #2) @ 14.73 p.s.i.a.	59,172	32,359	91,531	460	538	616	10,392	10,421	10,519
GRAND TOTAL @ 14.73 p.s.i.a.	4,297,460	761,516	5,058,976	55,699	301,767	385,607	463,308	518,576	564,433

Note:-

Contracted price in accordance with Price Schedule #1, unless otherwise noted

* Contracted price in accordance with Price Schedule #2.

\# Reserves in accordance with quantity limitation in contract

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TRANS-CANADA PIPE LINES LIMITED

Estimated Gas Reserves under Contract to Trans-Canada Pipe Lines
at the time of Initial Financing

(Reserves as of January 1, 1957 as contained in DeGolyer and MacNaughton Report dated February 11, 1957)

(All volumes in millions of cubic feet and measured at 14.4 p.s.i.a. and 60 degrees Fahrenheit except as otherwise noted)

FIELD	COMPANY	ESTIMATED PROVED GAS RESERVES
Bindloss	Bailey Selburn Oil & Gas et al	63,504
	Canadian Export Gas Ltd. et al	105,023
	Field Total	168,527
Provost	Calvan Consolidated Oil & Gas	60,310
	Canada Oil Lands	508
	Canadian Delhi Oil Ltd.	13,364
	Dome Exploration (Western) Ltd.	97,949
	Hudon's Bay Oil & Gas Co.	26,676
	Imperial Oil Limited	285,668
	Merrill Petroleums Ltd.	508
	Pacific Petroleums Limited	2,785
	The California Standard Company	20,727
	Field Total	508,495
Atlee-Buffalo	Canadian Export Gas Ltd. et al	82,701
	Field Total	82,701
Cessford	Canadian Delhi Oil Ltd.	366,143
	Canadian Export Gas Ltd. et al	123,703
	Fargo Oils Ltd.	166
	Hudson's Bay Oil & Gas Co.	406,043
	Royalite Oil Co., Ltd.	3,671
	Field Total	899,726
Oyen	Hudson's Bay Oil & Gas Co.	11,364
	Field Total	11,364
Pincher Creek	The British American Oil Co.	1,525,000
	Field Total	1,525,000
Princess-Patricia	The California Standard Co.	82,705
	Field Total	82,705
Sibbald	Sun Oil Company et al	44,141
	Field Total	44,141

FIELD	COMPANY	ESTIMATED PROVED GAS RESERVES
Nevis	Canadian Pipelines & Petroleums	6,501
	Canadian Superior Oils of Calif.	25,554
	Home Oil Co. Ltd.	119,596
	Hudson's Bay Oil and Gas Co.	5,110
	Imperial Oil Limited	10,454
	New Superior Oils of Canada	33,917
	The British American Oil Co.	128,153
	The California Standard Co.	90,099
	Sun Oil Company	4,260
	Field Total	423,644
Countess-Duchess	Canadian Delhi Oil Ltd.	18,053
	Canadian Delhi & Sun Oil	19,597
	Sun Oil, Merrill Pet & Can. Ex.	18,844
	Sun Oil & R. I. Smith	11,919
	Field Total	68,413
Gilby	Canadian Pipelines & Pet.	5,671
	Canadian Seaboard Oil Co.	11,291
	Canadian Superior Oils of Calif.	8,945
	Honolulu Oil Co.	11,291
	Hudson's Bay Oil & Gas Co.	20,280
	Merrill Holdings Ltd.	4,516
	Merrill Petroleums Ltd.	6,775
	The British American Oil Co.	26,864
	The California Standard Company	41,706
	Field Total	137,339
Homeglen-Rimbey	Amurex Oil Company	7,301
	Canadian Oil Co's Ltd.	27,484
	Hudson's Bay Oil and Gas Co.	7,269
	Imperial Oil Limited	62,011
	The British American Oil Co.	110,053
	The California Standard Co.	279,670
	Western Decalta Pet. et al	33,352
	Field Total	527,140
Kessler	Hudson's Bay Oil and Gas Co.	5,210
	Mill City Petroleums et al	23,298
	Field Total	28,508
	GRAND TOTAL	4,507,739
	GRAND TOTAL @ 14.73 p.s.i.a.	4,406,751

TRANS-CANADA PIPE LINES LIMITED

Estimated Gas Reserves under Contract to Trans-Canada Pipe Lines at the time of Initial Financing

(Reserves as of January 1, 1957 as contained in DeGolyer and MacNaughton Report dated February 11, 1957)

(All volumes in millions of cubic feet and measured at 14.4 p.s.i.a. and 60 degrees Fahrenheit except as otherwise noted)

FIELD	COMPANY	ESTIMATED PROVED GAS RESERVES
Bindloss	Bailey Selburn Oil & Gas et al	63,504
	Canadian Export Gas Ltd. et al	105,023
	Field Total	168,527
Provost	Calvan Consolidated Oil & Gas	60,310
	Canada Oil Lands	508
	Canadian Delhi Oil Ltd.	13,364
	Dome Exploration (Western) Ltd.	97,949
	Hudon's Bay Oil & Gas Co.	26,676
	Imperial Oil Limited	285,668
	Merrill Petroleums Ltd.	508
	Pacific Petroleums Limited	2,785
	The California Standard Company	20,727
	Field Total	508,495
Atlee-Buffalo	Canadian Export Gas Ltd. et al	82,701
	Field Total	82,701
Cessford	Canadian Delhi Oil Ltd.	366,143
	Canadian Export Gas Ltd. et al	123,703
	Fargo Oils Ltd.	166
	Hudson's Bay Oil & Gas Co.	406,043
	Royalite Oil Co., Ltd.	3,671
	Field Total	899,726
Oyen	Hudson's Bay Oil & Gas Co.	11,364
	Field Total	11,364
Pincher Creek	The British American Oil Co.	1,525,000
	Field Total	1,525,000
Princess-Patricia	The California Standard Co.	82,705
	Field Total	82,705
Sibbald	Sun Oil Company et al	44,141
	Field Total	44,141

FIELD	COMPANY	ESTIMATED PROVED GAS RESERVES
Nevis	Canadian Pipelines & Petroleums	6,501
	Canadian Superior Oils of Calif.	25,554
	Home Oil Co. Ltd.	119,596
	Hudson's Bay Oil and Gas Co.	5,110
	Imperial Oil Limited	10,454
	New Superior Oils of Canada	33,917
	The British American Oil Co.	128,153
	The California Standard Co.	90,099
	Sun Oil Company	4,260
	Field Total	423,644
Countess-Duchess	Canadian Delhi Oil Ltd.	18,053
	Canadian Delhi & Sun Oil	19,597
	Sun Oil, Merrill Pet & Can. Ex.	18,844
	Sun Oil & R. I. Smith	11,919
	Field Total	68,413
Gilby	Canadian Pipelines & Pet.	5,671
	Canadian Seaboard Oil Co.	11,291
	Canadian Superior Oils of Calif.	8,945
	Honolulu Oil Co	11,291
	Hudson's Bay Oil & Gas Co.	20,280
	Merrill Holdings Ltd	4,516
	Merrill Petroleums Ltd.	6,775
	The British American Oil Co.	26,864
	The California Standard Company	41,706
	Field Total	137,339
Homeglen-Rimbey	Amurex Oil Company	7,301
	Canadian Oil Co's Ltd	27,484
	Hudson's Bay Oil and Gas Co.	7,269
	Imperial Oil Limited	62,011
	The British American Oil Co.	110,053
	The California Standard Co.	279,670
	Western Decalta Pet. et al	33,352
	Field Total	527,140
Kessler	Hudson's Bay Oil and Gas Co.	5,210
	Mill City Petroleums et al	23,298
	Field Total	28,508
	GRAND TOTAL	4,507,739
	GRAND TOTAL @ 14.73 p.s.i.a.	4,406,751

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TRANS-CANADA PIPE LINES LIMITED

Summary by Fields of Gas Purchase Contracts
showing
Estimated Gas Reserves Under Contract and Maximum Daily Contract Volumes

(All Volumes **Measured** at 14.4 P S I A. and 60 Degrees Fahrenheit Except as Otherwise Noted)

Field and Companies	Gas Reserves M M C F			Maximum Daily Volumes M C F					
	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
BINDLOSS									
Bailey Selburn Oil & Gas et al	66,127	---------	66,127	4,850	4,870	4,870	4,875	5,960	8 570
Canadian Export Gas Ltd. et al	110,597	4,353	114,950	8,000	8,060	8,060	8,060	9,860	14,170
* Hudson's Bay Oil and Gas Co	1,915	---------	1,915	150	150	150	150	180	260
FIELD TOTAL	178,639	4,353	182,992	13,000	13,080	13,080	13,085	16,000	23,000
PROVOST									
* Barlow Development Ltd	1,855	---------	1,855	160	200	240	240	240	250
Calvan Consolidated Oil & Gas	60,310	959	61,269	5,200	6,600	7,800	7,800	7,800	8,100
Canada Oil Lands	508	---------	508	45	55	65	65	65	70
Canadian Delhi Oil Ltd.	13,364	1,376	14,740	1,140	1,460	1,730	1,730	1,730	1,800
Dome Exploration (Western) Ltd.	100,615	8,716	109,331	8,400	10,700	12,700	12,700	12,700	13,200
Hudson's Bay Oil and Gas Co.	27,096	1,588	28,684	2,285	2,900	3,450	3,450	3,450	3,585
Imperial Oil Limited	285,668	25,999	311,667	24,500	31,200	36,900	36,900	36,900	38,400
* Lincoln-McKay Development Co.	1,855	---------	1,855	160	200	240	240	240	250
Merrill Petroleums Ltd.	508	---------	508	45	55	65	65	65	70
Pacific Petroleums Limited	2,785	250	3,035	240	305	360	360	360	375
# The California Standard Company	20,727	---------	20,727	1,800	2,300	2,700	2,700	2,700	2,800
FIELD TOTAL	515,291	38,888	554,179	43,975	55,975	66,250	66,250	66,250	68,900

Field and Companies	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
ATLEE-BUFFALO									
Canadian Export Gas Ltd et al	82,701	16,598	99,299		8,650	8,450	9,000	10,600	12,000
FIELD TOTAL	82,701	16,598	99,299		8,650	8,450	9,000	10,600	12,000
CESSFORD									
Canadian Delhi Oil Ltd.	366,143	94,841	460,984		41,680	47,590	47,600	47 600	48,220
Canadian Export Gas Ltd et al	123,703	4,088	127,791		14,080	16,080	16,080	16,080	16,290
Fargo Oils Ltd.	1,244	838	2,082		19	22	22	22	22
Hudson's Bay Oil and Gas Co.	402,194	115,592	517,786		46,250	52,800	52,800	52,800	53,500
Royalite Oil Co., Ltd	5,653	582	6,235		418	477	477	477	484
FIELD TOTAL	898,937	215,941	1,114,878		102,477	116,969	116,979	116,979	118,516
HUSSAR AREA									
Tennessee Gas Transmission Co.	130,024	668	130,692		16,000	16,000	16,000	16,000	16,000
FIELD TOTAL	130,024	668	130,692		16,000	16,000	16,000	16,000	16,000
OYEN									
Hudson's Bay Oil and Gas Co.	11,344	2,135	13,479		1,010	975	1,044	1,218	1,393
The Ohio Oil Co.	10,370	1,538	11,908		920	890	950	1,110	1,270
FIELD TOTAL	21,714	3,673	25,387		1,930	1,865	1,994	2,328	2,663
PINCHER CREEK									
The British American Oil Co.	1,137,139	244,498	1,381,637		100,000	125,000	125.000	160,000	160,000
FIELD TOTAL	1,137,139	244,498	1,381,637		100,000	125,000	125,000	160,000	160,000
PRINCESS-PATRICIA									
# The California Standard Co.	82,610	95	82,705		7,000	6,800	7.600	8,600	9,700
FIELD TOTAL	82,610	95	82,705		7,000	6,800	7.600	8.600	9,700
SIBBALD									
Sun Oil Company et al	41,136	7,568	48,704		3,600	3,500	3,750	4,400	5,000
FIELD TOTAL	41,136	7,568	48,704		3.600	3,500	3.750	4,400	5;000

Field and Companies	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
NEVIS									
Canadian Pipelines & Petroleums	6,501	---------	6,501			550	590	700	790
Canadian Superior Oils of Calif.	19,186	1,499	20,685			2,170	2,320	2,730	3,100
Home Oil Co. Ltd.	123,957	11,067	135,024			10,400	11,000	13,000	14,760
Hudson's Bay Oil and Gas Co.	5,415	2,365	7,780			430	460	550	620
Imperial Oil Limited	11,348	2,344	13,692			890	950	1,120	1,260
New Superior Oils of Canada	35,291	2,965	38,256			2,880	3,080	3,630	4,100
The British American Oil Co.	123,792	11,601	135,393			11,000	11,800	13,900	15,750
# The California Standard Co.	90,099	1,941	92,040			7,850	8,375	9,850	11,200
Sun Oil Company	916	48	964			360	390	450	520
FIELD TOTAL	416,505	33,830	450,335			36,530	38,965	45,930	52,100
COUNTESS-DUCHESS									
Canadian Delhi Oil Ltd.	18,053	17,788	35,841			1,670	1,773	2,372	
Canadian Delhi & Sun Oil	19,504	37,915	57,419			1,813	1,925	2,575	
Sun Oil, Merrill Pet. & Can. Ex.	18,844	34,704	53,548			1,743	1.851	2,476	
Sun Oil & R.I. Smith	11,919	6,867	18,786			1,102	1,171	1,566	
FIELD TOTAL	68,320	97,274	165,594			6,328	6,720	8,989	
GILBY									
Canadian Pipelines & Pet.	9,302	1,946	11,248			424	500	566	
# Canadian Seaboard Oil Co.	11,291	---------	11,291			843	1,000	1,127	
Canadian Superior Oils of Calif.	12,074	3,603	15,677			670	790	890	
# Honolulu Oil Co.	11,291	---------	11,291			843	1,000	1,127	
Hudson's Bay Oil and Gas Co.	40,875	2,203	43,078			1.500	1,800	2,020	
# Merrill Holdings Ltd.	4,516	---------	4,516			337	400	451	
# Merrill Petroleums Ltd	6,775	---------	6,775			506	600	676	
The British American Oil Co.	63,297	32,427	95,724			2.000	2,359	2,671	
# The California Standard Company	40,581	---------	40,581			3.150	3,675	4,175	
FIELD TOTAL	200,002	40,179	240,181			10 273	12,124	13,703	

Field and Companies	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
HOMEGLEN-RIMBEY									
Amurex Oil Company	7,344	---------	7,344				630	700	1,000
Canadian Oil Co's Ltd.	24,099	---------	24,099				2,360	2,660	3,760
Hudson's Bay Oil and Gas Co.	7,461	2,386	9,847				620	700	1,000
Imperial Oil Limited	60,269	847	61,116				5,340	6,000	8,480
The British American Oil Co.	115,803	33,499	149,302				9,470	10,640	15,100
# The California Standard Co.	279,670	---------	279,670				24,100	27,100	38,300
* The California Standard Co.	54,902	33,101	88,003				10,000	10,000	10,000
Western Decalta Pet. et al	45,322	102	45,424				2,880	3,224	4,560
FIELD TOTAL	594,870	69,935	664,805				55,400	61,024	82,200
KESSLER									
Hudson's Bay Oil and Gas Co.	4,757	1,375	6,132				603	641	840
Mill City Petroleums et al	23,298	4,093	27,391				2,698	2,864	3,757
FIELD TOTAL	28,055	5,468	33,523				3,301	3,505	4,597
Total (Price Schedule #1)	4,335,416	745,867	5,081,283	56,505	308,132	393,814	463,295	519,800	566,608
*Total (Price Schedule #2)	60,527	33,101	93,628	470	550	630	10,630	10,660	10,760
GRAND TOTAL	4,395,943	778,968	5,174,911	56,975	308,682	394,444	473,925	530,460	577,368
Total (Price Schedule #1) @ 14.73 p.s.i.a.	4,238,288	729,157	4,967,445	55,239	301,229	384,991	452,916	508,155	553,914
*Total (Price Schedule #2) @ 14.73 p.s.i.a.	59,172	32,359	91,531	460	538	616	10,392	10,421	10,519
GRAND TOTAL @ 14.73 p.s.i.a.	4,297,460	761,516	5,058,976	55,699	301,767	385,607	463,308	518,576	564,433

Note:-

Contracted price in accordance with Price Schedule #1, unless otherwise noted.

* Contracted price in accordance with Price Schedule #2.

\# Reserves in accordance with quantity limitation in contract.

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TRANS-CANADA PIPE LINES LIMITED

Summary by Fields of Gas Purchase Contracts
showing
Estimated Gas Reserves Under Contract and Maximum Daily Contract Volumes

(All Volumes Measured at 14.4 P.S.I.A. and 60 Degrees Fahrenheit Except as Otherwise Noted)

Field and Companies	Gas Reserves M M C F			Maximum Daily Volumes M C F					
	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
BINDLOSS									
Bailey Selburn Oil & Gas et al	66,127	---------	66,127	4,850	4,870	4,870	4,875	5,960	8,570
Canadian Export Gas Ltd. et al	110,597	4,353	114,950	8,000	8,060	8,060	8,060	9,860	14,170
* Hudson's Bay Oil and Gas Co	1,915	---------	1,915	150	150	150	150	180	260
FIELD TOTAL	178,639	4,353	182,992	13,000	13,080	13,080	13,085	16,000	23,000
PROVOST									
* Barlow Development Ltd.	1,855	---------	1,855	160	200	240	240	240	250
Calvan Consolidated Oil & Gas	60,310	959	61,269	5,200	6,600	7,800	7,800	7,800	8,100
Canada Oil Lands	508	---------	508	45	55	65	65	65	70
Canadian Delhi Oil Ltd.	13,364	1,376	14,740	1,140	1,460	1,730	1,730	1,730	1,800
Dome Exploration (Western) Ltd.	100,615	8,716	109,331	8,400	10,700	12,700	12,700	12,700	13,200
Hudson's Bay Oil and Gas Co.	27,096	1,588	28,684	2,285	2,900	3,450	3,450	3,450	3,585
Imperial Oil Limited	285,668	25,999	311,667	24,500	31,200	36,900	36,900	36,900	38,400
* Lincoln-McKay Development Co	1,855	---------	1,855	160	200	240	240	240	250
Merrill Petroleums Ltd.	508	---------	508	45	55	65	65	65	70
Pacific Petroleums Limited	2,785	250	3,035	240	305	360	360	360	375
# The California Standard Company	20,727	---------	20,727	1,800	2,300	2,700	2,700	2,700	2,800
FIELD TOTAL	515,291	38,888	554,179	43,975	55,975	66,250	66,250	66,250	68,900

Field and Companies	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
ATLEE-BUFFALO									
Canadian Export Gas Ltd. et al	82,701	16,598	99,299		8,650	8,450	9.000	10,600	12,000
FIELD TOTAL	82,701	16,598	99,299		8,650	8,450	9,000	10,600	12,000
CESSFORD									
Canadian Delhi Oil Ltd.	366,143	94,841	460,984		41,680	47,590	47.600	47.600	48,220
Canadian Export Gas Ltd. et al	123,703	4,088	127,791		14,080	16,080	16.080	16,080	16,290
Fargo Oils Ltd.	1,244	838	2,082		19	22	22	22	22
Hudson's Bay Oil and Gas Co	402,194	115,592	517,786		46,250	52,800	52,800	52,800	53,500
Royalite Oil Co , Ltd	5,653	582	6,235		418	477	477	477	484
FIELD TOTAL	898,937	215,941	1,114,878		102,477	116,969	116.979	116,979	118,516
HUSSAR AREA									
Tennessee Gas Transmission Co.	130,024	668	130,692		16,000	16,000	16,000	16,000	16,000
FIELD TOTAL	130,024	668	130,692		16,000	16,000	16,000	16,000	16.000
OYEN									
Hudson's Bay Oil and Gas Co.	11,344	2,135	13,479		1,010	975	1,044	1,218	1.393
The Ohio Oil Co	10,370	1,538	11,908		920	890	950	1,110	1,270
FIELD TOTAL	21,714	3,673	25,387		1,930	1,865	1.994	2,328	2,663
PINCHER CREEK									
The British American Oil Co	1,137,139	244,498	1,381,637		100,000	125,000	125.000	160,000	160,000
FIELD TOTAL	1,137,139	244,498	1,381,637		100,000	125,000	125,000	160,000	160,000
PRINCESS-PATRICIA									
# The California Standard Co.	82,610	95	82,705		7.000	6.800	7.600	8.600	9,700
FIELD TOTAL	82,610	95	82,705		7,000	6.800	7.600	8.600	9.700
SIBBALD									
Sun Oil Company et al	41,136	7,568	48,704		3,600	3.500	3,750	4,400	5.000
FIELD TOTAL	41,136	7,568	48,704		3,600	3.500	3,750	4.400	5.000

Field and Companies	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
NEVIS									
Canadian Pipelines & Petroleums	6,501	---------	6,501			550	590	700	790
Canadian Superior Oils of Calif	19,186	1,499	20,685			2,170	2,320	2,730	3,100
Home Oil Co. Ltd	123,957	11,067	135,024			10,400	11,000	13,000	14,760
Hudson's Bay Oil and Gas Co	5,415	2,365	7,780			430	460	550	620
Imperial Oil Limited	11,348	2,344	13,692			890	950	1,120	1,260
New Superior Oils of Canada	35,291	2,965	38,256			2,880	3,080	3.630	4,100
The British American Oil Co.	123,792	11,601	135,393			11,000	11,800	13,900	15,750
# The California Standard Co.	90,099	1,941	92,040			7.850	8,375	9,850	11.200
Sun Oil Company	916	48	964			360	390	450	520
FIELD TOTAL	416,505	33,830	450,335			36,530	38,965	45,930	52.100
COUNTESS-DUCHESS									
Canadian Delhi Oil Ltd.	18,053	17,788	35,841			1,670	1,773	2,372	
Canadian Delhi & Sun Oil	19,504	37,915	57,419			1,813	1.925	2,575	
Sun Oil, Merrill Pet. & Can. Ex.	18,844	34,704	53,548			1,743	1.851	2,476	
Sun Oil & R I. Smith	11,919	6,867	18,786			1.102	1,171	1,566	
FIELD TOTAL	68,320	97,274	165,594			6,328	6.720	8,989	
GILBY									
Canadian Pipelines & Pet.	9,302	1,946	11,248			424	500	566	
# Canadian Seaboard Oil Co	11,291	---------	11,291			843	1,000	1,127	
Canadian Superior Oils of Calif.	12,074	3,603	15,677			670	790	890	
# Honolulu Oil Co.	11,291	---------	11,291			843	1,000	1,127	
Hudson's Bay Oil and Gas Co	40,875	2,203	43,078			1.500	1.800	2,020	
# Merrill Holdings Ltd.	4,516	---------	4,516			337	400	451	
# Merrill Petroleums Ltd	6,775	---------	6,775			506	600	676	
The British American Oil Co	63,297	32,427	95,724			2.000	2.359	2.671	
# The California Standard Company	40,581	---------	40,581			3.150	3.675	4,175	
FIELD TOTAL	200,002	40,179	240,181			10 273	12,124	13.703	

Field and Companies	Proved	Probable	Total	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63 & thereafter
HOMEGLEN-RIMBEY									
Amurex Oil Company	7,344	---------	7,344				630	700	1,000
Canadian Oil Co's Ltd.	24,099	---------	24,099				2,360	2,660	3,760
Hudson's Bay Oil and Gas Co.	7,461	2,386	9,847				620	700	1,000
Imperial Oil Limited	60,269	847	61,116				5,340	6,000	8,480
The British American Oil Co.	115,803	33,499	149,302				9,470	10,640	15,100
# The California Standard Co.	279,670	---------	279,670				24,100	27,100	38,300
* The California Standard Co.	54,902	33,101	88,003				10,000	10,000	10,000
Western Decalta Pet. et al	45,322	102	45,424				2,880	3,224	4,560
FIELD TOTAL	594,870	69,935	664,805				55,400	61,024	82,200
KESSLER									
Hudson's Bay Oil and Gas Co.	4,757	1,375	6,132				603	641	840
Mill City Petroleums et al	23,298	4,093	27,391				2,698	2,864	3,757
FIELD TOTAL	28,055	5,468	33,523				3,301	3,505	4,597
Total (Price Schedule #1)	4,335,416	745,867	5,081,283	56,505	308,132	393,814	463,295	519,800	566,608
*Total (Price Schedule #2)	60,527	33,101	93,628	470	550	630	10,630	10,660	10,760
GRAND TOTAL	4,395,943	778,968	5,174,911	56,975	308,682	394,444	473,925	530,460	577,368
Total (Price Schedule #1) @ 14.73 p.s.i.a.	4,238,288	729,157	4,967,445	55,239	301,229	384,991	452,916	508,155	553,914
*Total (Price Schedule #2) @ 14.73 p.s.i.a.	59,172	32,359	91,531	460	538	616	10,392	10,421	10,519
GRAND TOTAL @ 14.73 p.s.i.a.	4,297,460	761,516	5,058,976	55,699	301,767	385,607	463,308	518,576	564,433

Note:-

Contracted price in accordance with Price Schedule #1, unless otherwise noted.

* Contracted price in accordance with Price Schedule #2.

\# Reserves in accordance with quantity limitation in contract

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PRICE SCHEDULE NO. 1

Period	Price
From the date of initial delivery through Dec. 31, 1959	10.00¢ per Mcf
From Jan. 1, 1960 through Dec. 31, 1960	10.25¢ per Mcf
From Jan. 1, 1961 through Dec. 31, 1961	10.50¢ per Mcf
From Jan. 1, 1962 through Dec. 31, 1962	10.75¢ per Mcf
From Jan. 1, 1963 through Dec. 31, 1963	11.00¢ per Mcf
From Jan. 1, 1964 through Dec. 31, 1964	11.25¢ per Mcf
From Jan. 1, 1965 through Dec. 31, 1965	11.50¢ per Mcf
From Jan. 1, 1966 through Dec. 31, 1966	11.75¢ per Mcf
From Jan. 1, 1967 through Dec. 31, 1967	12.00¢ per Mcf
From Jan. 1, 1968 through Dec. 31, 1968	12.25¢ per Mcf
From Jan. 1, 1969 through Dec. 31, 1969	12.50¢ per Mcf
From Jan. 1, 1970 through Dec. 31, 1970	12.75¢ per Mcf
From Jan. 1, 1971 through Dec. 31, 1971	13.00¢ per Mcf
From Jan. 1, 1972 through Dec. 31, 1972	13.25¢ per Mcf
From Jan. 1, 1973 through Dec. 31, 1973	13.50¢ per Mcf
From Jan. 1, 1974 through Dec. 31, 1974	13.75¢ per Mcf
From Jan. 1, 1975 through Dec. 31, 1975	14.00¢ per Mcf
From Jan. 1, 1976 through Dec. 31, 1976	14.25¢ per Mcf
From Jan. 1, 1977 through Dec. 31, 1977	14.50¢ per Mcf
From Jan. 1, 1978 through Dec. 31, 1978	14.75¢ per Mcf
From Jan. 1, 1979 through Dec. 31, 1979	15.00¢ per Mcf
From Jan. 1, 1980 through Dec. 31, 1980	15.25¢ per Mcf
From Jan. 1, 1981 through Dec. 31, 1981	15.50¢ per Mcf
From Jan. 1, 1982 and thereafter during the term hereof	15.75¢ per Mcf

PRICE SCHEDULE NO. 2

Period	Price
From the date of initial delivery through Dec. 31, 1959	12.00¢ per Mcf
From Jan. 1, 1960 through Dec. 31, 1960	12.25¢ per Mcf
From Jan. 1, 1961 through Dec. 31, 1961	12.50¢ per Mcf
From Jan. 1, 1962 through Dec. 31, 1962	12.75¢ per Mcf
From Jan. 1, 1963 through Dec. 31, 1963	13.00¢ per Mcf
From Jan. 1, 1964 through Dec. 31, 1964	13.25¢ per Mcf
From Jan. 1, 1965 through Dec. 31, 1965	13.50¢ per Mcf
From Jan. 1, 1966 through Dec. 31, 1966	13.75¢ per Mcf
From Jan. 1, 1967 through Dec. 31, 1967	14.00¢ per Mcf
From Jan. 1, 1968 through Dec. 31, 1968	14.25¢ per Mcf
From Jan. 1, 1969 through Dec. 31, 1969	14.50¢ per Mcf
From Jan. 1, 1970 through Dec. 31, 1970	14.75¢ per Mcf
From Jan. 1, 1971 through Dec. 31, 1971	15.00¢ per Mcf
From Jan. 1, 1972 through Dec. 31, 1972	15.25¢ per Mcf
From Jan. 1, 1973 through Dec. 31, 1973	15.50¢ per Mcf
From Jan. 1, 1974 through Dec. 31, 1974	15.75¢ per Mcf
From Jan. 1, 1975 through Dec. 31, 1975	16.00¢ per Mcf
From Jan. 1, 1976 through Dec. 31, 1976	16.25¢ per Mcf
From Jan. 1, 1977 through Dec. 31, 1977	16.50¢ per Mcf
From Jan. 1, 1978 through Dec. 31, 1978	16.75¢ per Mcf
From Jan 1, 1979 through Dec. 31, 1979	17.00¢ per Mcf
From Jan. 1, 1980 through Dec. 31, 1980	17.25¢ per Mcf
From Jan. 1, 1981 through Dec. 31, 1981	17.50¢ per Mcf
From Jan. 1, 1982 and thereafter during the term hereof	17.75¢ per Mcf

PRICE SCHEDULE NO. 3

Period	Price
From the date of initial delivery through Dec. 31, 1960	13.25¢ per Mcf
From Jan. 1, 1961 through Dec. 31, 1961	13.50¢ per Mcf
From Jan. 1, 1962 through Dec. 31, 1962	13.75¢ per Mcf
From Jan. 1, 1963 through Dec. 31, 1963	14.00¢ per Mcf
From Jan. 1, 1964 through Dec. 31, 1964	14.25¢ per Mcf
From Jan. 1, 1965 through Dec. 31, 1965	14.50¢ per Mcf
From Jan. 1, 1966 through Dec. 31, 1966	14.75¢ per Mcf
From Jan. 1, 1967 through Dec. 31, 1967	15.00¢ per Mcf
From Jan. 1, 1968 through Dec. 31, 1968	15.25¢ per Mcf
From Jan. 1, 1969 through Dec. 31, 1969	15.50¢ per Mcf
From Jan. 1, 1970 through Dec. 31, 1970	15.75¢ per Mcf
From Jan. 1, 1971 through Dec. 31, 1971	16.00¢ per Mcf
From Jan. 1, 1972 through Dec. 31, 1972	16.25¢ per Mcf
From Jan. 1, 1973 through Dec. 31, 1973	16.50¢ per Mcf
From Jan. 1, 1974 through Dec. 31, 1974	16.75¢ per Mcf
From Jan. 1, 1975 through Dec. 31, 1975	17.00¢ per Mcf
From Jan. 1, 1976 through Dec. 31, 1976	17.25¢ per Mcf
From Jan. 1, 1977 through Dec. 31, 1977	17.50¢ per Mcf
From Jan. 1, 1978 through Dec. 31, 1978	17.75¢ per Mcf
From Jan. 1, 1979 through Dec. 31, 1979	18.00¢ per Mcf
From Jan. 1, 1980 through Dec. 31, 1980	18.25¢ per Mcf
From Jan. 1, 1981 through Dec. 31, 1981	18.50¢ per Mcf
From Jan. 1, 1982 and thereafter during the term hereof	18.75¢ per Mcf

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PRICE SCHEDULE NO. 1

Period	Price
From the date of initial delivery through Dec. 31, 1959	10.00¢ per Mcf
From Jan. 1, 1960 through Dec. 31, 1960	10.25¢ per Mcf
From Jan. 1, 1961 through Dec. 31, 1961	10.50¢ per Mcf
From Jan. 1, 1962 through Dec. 31, 1962	10.75¢ per Mcf
From Jan. 1, 1963 through Dec. 31, 1963	11.00¢ per Mcf
From Jan. 1, 1964 through Dec. 31, 1964	11.25¢ per Mcf
From Jan. 1, 1965 through Dec. 31, 1965	11.50¢ per Mcf
From Jan. 1, 1966 through Dec. 31, 1966	11.75¢ per Mcf
From Jan. 1, 1967 through Dec. 31, 1967	12.00¢ per Mcf
From Jan. 1, 1968 through Dec. 31, 1968	12.25¢ per Mcf
From Jan. 1, 1969 through Dec. 31, 1969	12.50¢ per Mcf
From Jan. 1, 1970 through Dec. 31, 1970	12.75¢ per Mcf
From Jan. 1, 1971 through Dec. 31, 1971	13.00¢ per Mcf
From Jan. 1, 1972 through Dec. 31, 1972	13.25¢ per Mcf
From Jan. 1, 1973 through Dec. 31, 1973	13.50¢ per Mcf
From Jan. 1, 1974 through Dec. 31, 1974	13.75¢ per Mcf
From Jan. 1, 1975 through Dec. 31, 1975	14.00¢ per Mcf
From Jan. 1, 1976 through Dec. 31, 1976	14.25¢ per Mcf
From Jan. 1, 1977 through Dec. 31, 1977	14.50¢ per Mcf
From Jan. 1, 1978 through Dec. 31, 1978	14.75¢ per Mcf
From Jan. 1, 1979 through Dec. 31, 1979	15.00¢ per Mcf
From Jan. 1, 1980 through Dec. 31, 1980	15.25¢ per Mcf
From Jan. 1, 1981 through Dec. 31, 1981	15.50¢ per Mcf
From Jan. 1, 1982 and thereafter during the term hereof	15.75¢ per Mcf

PRICE SCHEDULE NO. 2

Period	Price
From the date of initial delivery through Dec. 31, 1959	12.00¢ per Mcf
From Jan. 1, 1960 through Dec. 31, 1960	12.25¢ per Mcf
From Jan. 1, 1961 through Dec. 31, 1961	12.50¢ per Mcf
From Jan. 1, 1962 through Dec. 31, 1962	12.75¢ per Mcf
From Jan. 1, 1963 through Dec. 31, 1963	13.00¢ per Mcf
From Jan. 1, 1964 through Dec. 31, 1964	13.25¢ per Mcf
From Jan. 1, 1965 through Dec. 31, 1965	13.50¢ per Mcf
From Jan. 1, 1966 through Dec. 31, 1966	13.75¢ per Mcf
From Jan. 1, 1967 through Dec. 31, 1967	14.00¢ per Mcf
From Jan. 1, 1968 through Dec. 31, 1968	14.25¢ per Mcf
From Jan. 1, 1969 through Dec. 31, 1969	14.50¢ per Mcf
From Jan. 1, 1970 through Dec. 31, 1970	14.75¢ per Mcf
From Jan. 1, 1971 through Dec. 31, 1971	15.00¢ per Mcf
From Jan. 1, 1972 through Dec. 31, 1972	15.25¢ per Mcf
From Jan. 1, 1973 through Dec. 31, 1973	15.50¢ per Mcf
From Jan. 1, 1974 through Dec. 31, 1974	15.75¢ per Mcf
From Jan. 1, 1975 through Dec. 31, 1975	16.00¢ per Mcf
From Jan. 1, 1976 through Dec. 31, 1976	16.25¢ per Mcf
From Jan. 1, 1977 through Dec. 31, 1977	16.50¢ per Mcf
From Jan. 1, 1978 through Dec. 31, 1978	16.75¢ per Mcf
From Jan. 1, 1979 through Dec. 31, 1979	17.00¢ per Mcf
From Jan. 1, 1980 through Dec. 31, 1980	17.25¢ per Mcf
From Jan. 1, 1981 through Dec. 31, 1981	17.50¢ per Mcf
From Jan. 1, 1982 and thereafter during the term hereof	17.75¢ per Mcf

PRICE SCHEDULE NO. 3

Period	Price
From the date of initial delivery through Dec. 31, 1960	13.25¢ per Mcf
From Jan. 1, 1961 through Dec. 31, 1961	13.50¢ per Mcf
From Jan. 1, 1962 through Dec. 31, 1962	13.75¢ per Mcf
From Jan. 1, 1963 through Dec. 31, 1963	14.00¢ per Mcf
From Jan. 1, 1964 through Dec. 31, 1964	14.25¢ per Mcf
From Jan. 1, 1965 through Dec. 31, 1965	14.50¢ per Mcf
From Jan. 1, 1966 through Dec. 31, 1966	14.75¢ per Mcf
From Jan. 1, 1967 through Dec. 31, 1967	15.00¢ per Mcf
From Jan. 1, 1968 through Dec. 31, 1968	15.25¢ per Mcf
From Jan. 1, 1969 through Dec. 31, 1969	15.50¢ per Mcf
From Jan. 1, 1970 through Dec. 31, 1970	15.75¢ per Mcf
From Jan. 1, 1971 through Dec. 31, 1971	16.00¢ per Mcf
From Jan. 1, 1972 through Dec. 31, 1972	16.25¢ per Mcf
From Jan. 1, 1973 through Dec. 31, 1973	16.50¢ per Mcf
From Jan. 1, 1974 through Dec. 31, 1974	16.75¢ per Mcf
From Jan. 1, 1975 through Dec. 31, 1975	17.00¢ per Mcf
From Jan. 1, 1976 through Dec. 31, 1976	17.25¢ per Mcf
From Jan. 1, 1977 through Dec. 31, 1977	17.50¢ per Mcf
From Jan. 1, 1978 through Dec. 31, 1978	17.75¢ per Mcf
From Jan. 1, 1979 through Dec. 31, 1979	18.00¢ per Mcf
From Jan. 1, 1980 through Dec. 31, 1980	18.25¢ per Mcf
From Jan. 1, 1981 through Dec. 31, 1981	18.50¢ per Mcf
From Jan. 1, 1982 and thereafter during the term hereof	18.75¢ per Mcf

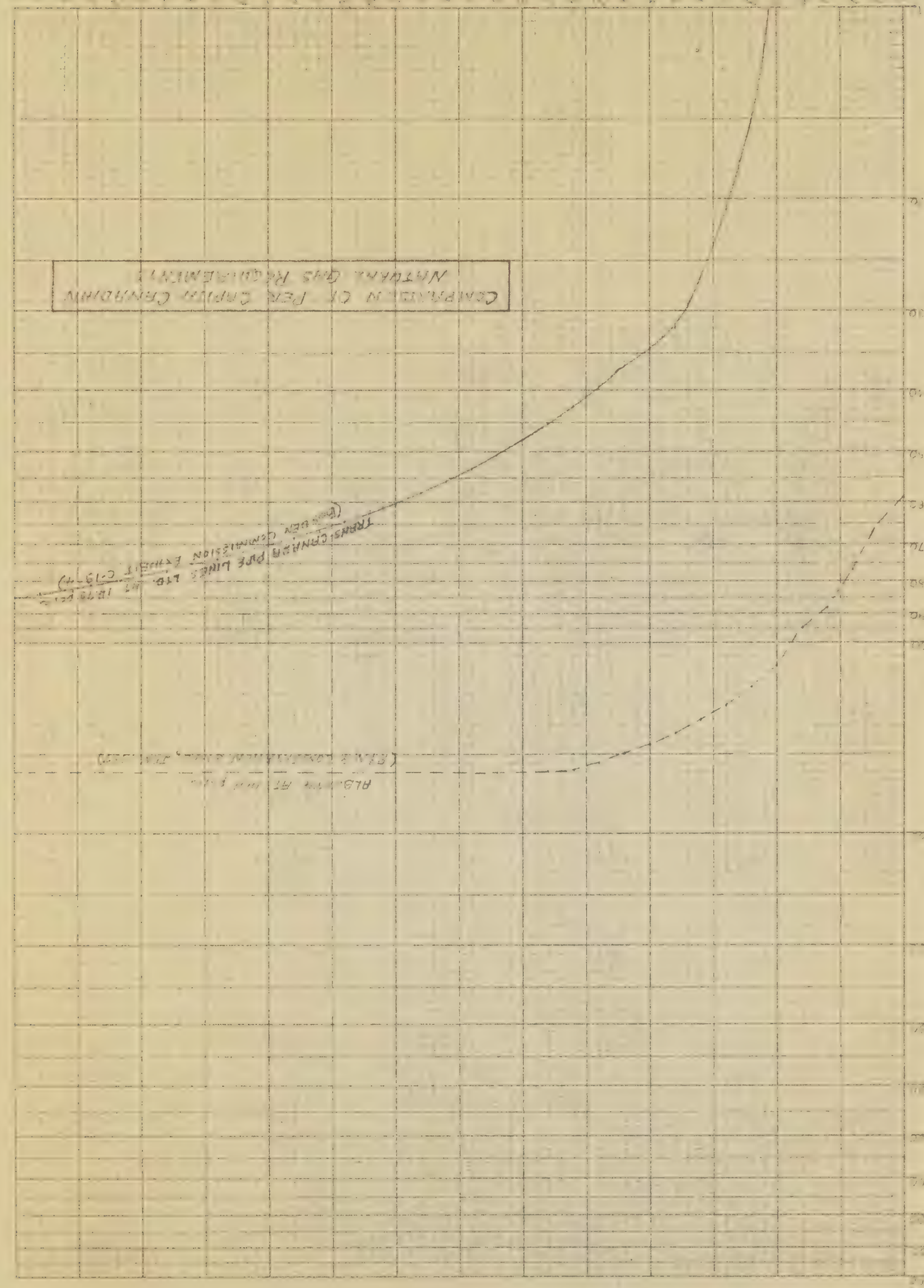

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Exhibit A
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TRANS-CANADA PIPE LINES LIMITED

ESTIMATED TOTAL SYSTEM TRANSMISSION COSTS OF SERVICE (INCLUDING 7.5% RETURN)

(909 MCF/Day Input System Based on December, 1957 Interim Market Projections)

	Without Emerson Sales (U.S. Export)						With Emerson Sales (U.S. Export)			
	1957-1958 (000's)	1958-1959 (000's)	1959-1960 (000's)	1960-1961 (000's)	1961-1962 (000's)	1962-1963 (000's)	1959-1960 (000's)	1960-1961 (000's)	1961-1962 (000's)	1962-1963 (000's)
PLANT INVESTMENT (Trans-Canada)										
Gross Plant Investment (Begin of Year):										
Pipelines	$ 143,354	$ 231,395	$ 231,395	$ 231,395	$ 231,395	$ 231,395	$ 235,363	$ 235,363	$ 235,363	$235,363,000
Compressor Stations	-0-	17,840	17,840	26,394	47,954	81,963	32,654	68,880	80,882	113,160,000
Sub Total	143,354	249,235	249,235	257,789	279,349	313,358	268,017	304,243	316,245	348,523,000
Less - Accrued Depreciation Reserve (End of Year)	(5,017)	(13,730)	(22,443)	(31,463)	(41,230)	(52,188)	(23,101)	(33,740)	(44,799)	(56,997)
Net Plant Investment (End of Year)	$ 138,337	$ 235,505	$ 226,792	$ 226,326	$ 238,119	$ 261,170	$ 244,916	$ 270,503	$ 271,446	$ 291,526
RATE BASE										
Av. Net Plant Investment During Year		$ 186,921	$ 231,149	$ 226,659	$ 232,323	$ 249,645	$ 240,211	$ 257,710	$ 270,975	$ 281,486
Plus-Materials & Supplies (1.25% Gross Plant Invest.)		3,115	3,115	3,225	3,492	3,917	3,350	3,803	3,953	4,357
-Gas in Storage in Pipeline		501	509	525	536	548	552	562	570	579
-Cash Working Capital (1/8 of O&M excl.Rentals)		331	362	440	548	709	422	603	694	867
Total Rate Base		$ 190,868	$ 235,135	$ 230,849	$ 236,899	$ 254,819	$ 244,535	$ 262,678	$ 276,192	$ 287,289
TRANSMISSION COSTS OF SERVICE										
Gas Purchased - Compressor Station Fuel		$ 217	$ 552	$ 1,074	$ 1,979	$ 3,013	$ 1,329	$ 2,366	$ 3,383	$ 4,499
- Unaccounted for Gas		131	203	266	310	359	334	412	458	507
Operation & Maintenance Expense:										
Pipelines ($300-$700/MI.)	1,245	1,245	1,245	1,245	1,245	1,245	1,264	1,264	1,264	1,264
Compressor Stations ($14/HP)	679	931	1,551	2,418	3,703	1,379	2,822	3,552	4,932	
Communications ($135/MI)	309	309	309	309	309	316	316	316	316	
Meter and Reg. Stations ($6,000/Stn.)	414	414	414	414	414	420	420	420	420	
Pipeline Rental (Crown Corp.)	5,561	8,952	11,559	13,111	14,753	8,952	11,559	13,111	14,753	
Sub Total	8,208	11,851	15,078	17,497	20,424	12,331	16,381	18,663	21,685	
Administrative & General (1)	1,257	1,305	1,496	1,754	2,268	1,521	2,049	2,221	2,773	
Depreciation @ 3.5% of Gross Depreciable Plt. (2)	8,713	8,713	9,020	9,767	10,958	9,371	10,639	11,059	12,198	
Taxes-General @ .4% of Gross Plant (incl. Crown Corp.)	1,468	1,499	1,574	1,709	1,919	1,574	1,761	1,856	2,067	
Total Before Return & Income Taxes	19,994	24,123	28,503	33,016	38,914	26,460	33,608	37,640	43,722	
Return @ 7.5% of Total Rate Base	14,315	17,635	17,314	17,767	19,111	18,340	19,701	20,714	21,547	
Income Taxes @ 47% (Basis 7.5% Return)	3,827	6,693	5,987	5,516	6,149	6,405	6,542	6,833	7,112	
Sub Total	18,142	24,328	23,301	23,283	25,260	24,745	26,243	27,547	28,659	
(% of Total)	(47.57%)	(50.21%)	(44.97%)	(41.36%)	(39.35%)	(48.33%)	(43.85%)	(42.26%)	(39.59%)	
Total Costs of Transmission	$ 38,136	$ 48,451	$ 51,809	$ 56,299	$ 64,201	$ 51,205	$ 59,851	$ 65,187	$ 72,388	
Annual Volumes Gas Sales - MMCF	89,874	135,933	170,866	190,684	209,647	205,069	244,067	264,090	282,045	
Wtd. Av. Miles Haul (Annual Basis)	1568.7	1717.0	1701.6	1698.4	1710.7	1351.2	1380.1	1402.0	1433.8	
Unit Costs of Transmission:										
Per MCF (@ 14.73#)	42.433¢	35.643¢	30.321¢	29.525¢	30.623¢	24.970¢	24.522¢	24.684¢	25.665¢	
Per MCF Per 100 Miles (@ 14.73#)	2.705¢	2.076¢	1.782¢	1.738¢	1.790¢	1.848¢	1.777¢	1.761¢	1.790¢	
Unit Cost of Gas Purchased For Sale: Per MCF @ 14.73#										
Cost of Gas Purchased	10.229¢	10.453¢	10.867¢	11.233¢	11.575¢	11.525¢	11.810¢	12.027¢	12.270¢	
Alberta Trunk Gathering	4.092¢	4.092¢	4.092¢	4.092¢	4.092¢	4.092¢	4.092¢	4.092¢	4.092¢	
Total	14.321¢	14.545¢	14.959¢	15.325¢	15.667¢	15.617¢	15.902¢	16.119¢	16.371¢	

(1) - 47.5% of O & M (excl. of Pipeline Rental) in 1958-1959; 45% in 1959-1960; 42.5% in 1960-1961; 40% in other years.
(2) - Excludes $285(000) Land in all years.

TRANS-CANADA PIPE LINES LIMITED

EXHIBIT A
Page 2.

ESTIMATED GAS SALES AND REQUIREMENTS PER DECEMBER, 1957 INTERIM MARKET PROJECTION
(Note: All volumes shown are Mcf @ 14.73 psia)

TCPL YEAR (Nov. 1-Oct. 31)		1958-1959 Max. Day Demand MCF	1958-1959 Annual MMCF	1959-1960 Max. Day Demand MCF	1959-1960 Annual MMCF	1960-1961 Max. Day Demand MCF	1960-1961 Annual MMCF	1961-1962 Max. Day Demand MCF	1961-1962 Annual MMCF	1962-1963 Max. Day Demand MCF	1962-1963 Annual MMCF
CANADIAN SALES											
Saskatchewan Power Corp.	F	10,000	3,285	10,000	3,650	10,000	3,650	10,000	3,650	10,000	3,650
Plains Western Gas & Elec. Co.	F	5,978	1,200	7,672	1,540	8,300	1,666	9,000	1,807	9,450	1,897
	XS	-	1,230	-	-	-	-	-	-	-	-
	TOTAL	5,978	2,430	7,672	1,540	8,300	1,666	9,000	1,807	9,450	1,897
Inter-City Gas Limited	F	7,210	974	9,560	1,291	10,825	1,739	12,075	1,932	12,680	2,032
Winnipeg & Central Gas Co.	F	30,300	6,866	36,600	8,31[illegible]	38,800	8,820	46,400	10,014	51,040	10,944
Northern Ontario Natural Gas Co. Ltd.:											
Western Zone	F	25,000	8,669	27,000	9,362	29,000	10,056	31,000	10,749	33,000	11,443
	XS	-	3,447	-	3,541	-	3,412	-	6,108	-	5,791
	TOTAL	25,000	12,116	27,000	12,903	29,000	13,468	31,000	16,857	33,000	17,234
Northern Zone	F	28,000	9,709	42,500	13,207	59,000	20,458	64,400	22,331	69,200	23,926
	XS	-	543	-	-	-	1,683	-	903	-	273
	TOTAL	28,000	10,252	42,500	13,207	59,000	22,141	64,400	23,234	69,200	24,200
Central Zone	F	3,240	395	4,350	467	5,350	572	6,137	721	6,923	852
Consumers Gas Company:											
Central Zone	F	83,725	28,146	102,990	34,434	119,648	40,920	145,790	47,200	171,492	53,080
Eastern Zone	F	5,500	2,290	10,900	2,985	17,000	4,303	20,600	5,126	23,800	6,060
Union Gas Company	F	-	-	45,033(Av)	18,375	54,305(Av)	21,375	61,589(Av)	21,000	70,200(Av)	24,000
Lakeland Natural Gas Company	F	3,200	1,145	6,100	2,182	10,000	3,577	14,500	5,187	20,000	7,154
Quebec Natural Gas Company	F	46,000	15,951	72,000	24,966	88,000	30,514	102,000	35,369	112,000	38,836
	XS	-	1,471	-	5,613	-	-	-	-	-	-
	OP	-	-	-	-	-	7,332	-	6,143	-	5,682
	TOTAL	46,000	17,422	72,000	30,579	88,000	37,846	102,000	41,512	112,000	44,518
Dominion Natural Gas Co.	F	2,750	502	3,300	602	4,100	748	4,900	894	4,900	894
Grimsby Natural Gas Co.	F	494	120	587	128	675	137	763	145	790	150
Peterborough P.V. Commission	F	2,358	473	3,809	888	6,137	1,469	7,349	2,006	8,513	2,508
Kingston P.V. Commission	F	2,620	758	5,365	1,383	6,325	1,685	6,890	1,899	7,240	2,159
Augusta Natural Gas Co.	F	7,787	2,700	8,652	3,000	9,805	3,415	10,959	3,800	12,112	4,200
	XS	-	-	-	-	-	3,335	-	3,700	-	4,067
	TOTAL	7,787	2,700	8,652	3,000	9,805	6,750	10,959	7,500	12,112	8,267
TOTAL CANADIAN SALES		264,162	89,874	396,418	135,933	477,270	170,866	554,352	190,684	623,340	209,647
U.S. EXPORT SALES											
Midwestern Gas Trans. Co. at Emerson	F	-0-	-0-	204,000	69,136	204,000	73,201	204,000	73,406	204,000	72,398
TOTAL GAS SALES		264,162	89,874	600,418	205,069	681,270	244,067	758,352	264,090	827,340	282,045
Plus TCPL Fuel & Losses		5,000	1,517	25,800	8,512	43,200	14,877	61,900	20,998	82,300	27,482
TOTAL GAS PURCHASE REQUIREMENTS		269,162	91,391	626,218	213,581	724,470	258,944	820,252	285,088	909,640	309,527

TRANS-CANADA PIPE LINES LIMITED

ESTIMATED AVERAGE COST OF GAS AT THE ALBERTA-SASKATCHEWAN BORDER
(909 MMcf/Day Input System Based on December, 1957 Interim Market Protection)

	Without Emerson (U.S. Export)					With Emerson (U.S. Export)				
	1958-1959	1959-1960	1960-1961	1961-1962	1962-1963	1958-1959	1959-1960	1960-1961	1961-1962	1962-1963
ANNUAL GAS PURCHASE REQUIREMENTS - MMcf @ 14.73 p.s.i.a.										
Gas Sales	89,874	135,933	170,866	190,684	209,647	89,874	205,069	244,067	264,090	282,045
Compressor Fuel, Etc.	1,517	3,785	7,177	12,912	19,230	1,517	8,512	14,877	20,988	27,482
Losses @ 1%	914	1,397	1,780	2,026	2,289	914	2,136	2,589	2,841	3,095
TOTAL	92,305	141,115	179,823	205,622	231,166	92,305	215,717	261,533	287,919	312,622
SOURCE OF SUPPLY - MMcf @ 14.73 p.s.i.a.										
Gas Available at Basic 10¢/Mcf	92,305	140,522	165,315	185,477	202,179	92,305	140,522	165,315	185,477	202,179
Gas Available at Basic 12¢/Mcf	-0-	225	4,239	4,250	4,285	-0-	225	4,239	4,250	4,285
Gas to be Bought at Basic 13.25¢/Mcf	-0-	368	9,729	15,895	24,702	-0-	74,970	91,979	98,192	106,158
UNIT COST OF GAS - ¢/Mcf @ 14.73 p.s.i.a.										
Basic Cost @ 10¢/Mcf	10.22916	10.44227	10.69800	10.95342	11.20945	10.22916	10.44227	10.69800	10.95342	11.20945
Basic Cost @ 12¢/Mcf	12.27500	12.48777	12.74350	12.99923	13.25495	12.27500	12.48777	12.74350	12.99923	13.25495
Basic Cost @ 13.25¢/Mcf		13.55365	13.76641	14.02214	14.27787		13.55365	13.76641	14.02214	14.27787
PURCHASE COST OF GAS										
At Basic Cost of 10¢/Mcf	$9,442,026	$14,673,687	$17,685,399	$20,316,631	$22,663,154	$9,442,026	$14,673,687	$17,685,399	$20,316,631	$22,663,154
At Basic Cost of 12¢/Mcf		28,097	540,197	552,467	567,975		28,097	540,197	552,467	567,975
At Basic Cost of 13.25¢/Mcf		49,877	1,339,334	2,228,819	3,526,919		10,161,171	12,662,206	13,759,786	15,157,101
TOTAL	9,442,026	14,751,661	19,564,930	23,097,917	26,758,048	9,442,026	24,862,955	30,887,802	34,628,884	38,388,230
WEIGHTED AVERAGE PURCHASE COST OF GAS-¢/Mcf @ 14.73 psia	10.229	10.453	10.867	11.233	11.575	10.229	11.525	11.810	12.027	12.279
WEIGHTED AVERAGE TRANSPORTATION COST-¢/Mcf @ 14.73 psia	4.092	4.092	4.092	4.092	4.092	4.092	4.092	4.092	4.092	4.092
TOTAL PURCHASE AND TRANSPORT COST-¢/Mcf @ 14.73 psia	14.321	14.545	14.959	15.325	15.667	14.321	15.617	15.902	16.119	16.371
BREAKDOWN OF GAS PURCHASES AND TRANSPORTATION COSTS (000's)										
Sales	$ 12,871	$ 19,771	$ 25,560	$ 30,222	$ 32,845	$ 12,871	$ 32,026	$ 38,811	$ 42,569	$ 46,174
Compressor Fuel Etc.	217	552	1,074	1,979	3,013	217	1,329	2,366	3,383	4,499
Losses	131	203	266	310	359	131	334	412	458	507
TOTAL	13,219	20,526	26,900	32,511	36,217	13,219	33,689	41,589	46,410	51,180

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EXHIBIT B
Page 1.

TRANS-CANADA PIPE LINES LIMITED

COMPARISON OF ESTIMATED REVENUES AND COSTS OF SERVICE (Including 7.5% Return)
FOR PROPOSED SALES TO MIDWESTERN GAS TRANSMISSION COMPANY AT EMERSON, Manitoba (U.S. Export)
(909 MMCF/Day Input System Based on December, 1957 Interim Market Projections)

	1959-1960	1960-1961	1961-1962	1962-1963 With Crown
ESTIMATED REVENUES				
Rate:				
Demand Charge - Monthly (Per Mcf @ 15.025#)	$ 2.20	$ 2.20	$ 2.20	$ 2.20
- Annual (Per Mcf @ 15.025#)	$26.40	$26.40	$26.40	$26.40
Commodity Charge - Per Mcf @ 15.025#	20¢	20¢	20¢	20¢
Minimum Annual Load Factor (Take or Pay For)	75%	75%	75%	95%
Estimated Sales:				
Demand - Mcf @ 14.73#	204,000	204,000	204,000	204,000
- Mcf @ 15.025# (Mult. by 0.98037)	200,000	200,000	200,000	200,000
Annual - Mcf @ 14.73#	69,136,000	73,201,000	73,406,000	72,398,000
- Mcf @ 15.025# (Mult. by 0.98037)	67,778,860	71,829,872	72,209,482	70,976,827
Estimated Revenues:				
Demand Charges	$5,385,600	$ 5,385,600	$ 5,385,600	$ 5,385,600
Commodity Charges	13,555,772	14,365,274	14,441,896	14,195,365
Total Revenues	$18,941,372	$19,751,574	$19,827,496	$19,580,965
COST OF SERVICE				
Cost of Gas Purchased:				
Av. Unit Cost of All Gas Purchased per Mcf @ 14.73# (Incl. $.04092/Mcf Alberta Trunk Gathering)	$ 0.15617	$ 0.15902	$ 0.16119	$ 0.16371
Annual Volumes of Gas Purchased for Sale At Emerson Mcf @ 14.73#	69,136,000	73,201,000	73,406,000	72,398,000
Total Cost of Gas Purchased for Sale at Emerson	$10,796,969	$11,640,423	$11,832,313	$11,852,[illegible]
Allocated Portion of Total System Trans. Cost of Service (Incl. 7.5% Return)	8,330,000	8,328,000	8,104,000	8,090,000
Total Cost of Service (Incl. 7.5% Return)	$19,126,969	$19,968,423	$19,936,313	$19,942,276
[illegible]	$(185,597)	[illegible]	$(109,817)	$(361,311)

TRANS-CANADA PIPE LINES LIMITED

ALLOCATION OF TOTAL SYSTEM TRANSMISSION COSTS OF SERVICE (INCLUDING RETURN @ 7.5%)

AS BETWEEN CANADIAN SALES AND PROPOSED SALES TO MIDWESTERN GAS TRANSMISSION COMPANY AT EMERSON, MANITOBA (U.S. EXPORT)

(909 MMcf/Day Input System Based on December, 1957 Interim Market Projections)

TOTAL SYSTEM TRANSMISSION COSTS OF SERVICE	1959-1960			1960-1961			1961-1962			1962-1963		
	Total Costs (000's)	Demand Costs (000's)	Commodity Costs (000's)	Total Costs (000's)	Demand Costs (000's)	Commodity Costs (000's)	Total Costs (000's)	Demand Costs (000's)	Commodity Costs (000's)	Total Costs (000's)	Demand Costs (000's)	Commodity Costs (000's)
Cost of Gas Purchased for Fuel and Losses	$ 1,663	$ --	$ 1,663	$ 2,778	$ --	$ 2,778	$ 3,841	$ --	$ 3,841	$ 5,006	$ --	$ 5,006
Operation and Maintenance Expenses	3,379	1,690	1,689	4,822	2,411	2,411	5,552	2,776	2,776	6,932	3,466	3,466
Administrative and General Expenses	1,521	761	760	2,049	1,024	1,025	2,221	1,110	1,111	2,773	1,387	1,386
Pipeline Rentals (Crown Corp.)	8,952	4,476	4,476	11,559	5,780	5,779	13,111	6,556	6,555	14,753	7,376	7,377
Depreciation @ 3.5% (TCPL Plant Only)	9,371	4,685	4,686	10,639	5,319	5,320	11,059	5,529	5,530	12,198	6,099	6,099
Taxes - General	1,574	787	787	1,761	881	880	1,856	928	928	2,067	1,033	1,034
Total Before Return and Income Taxes	26,460	12,399	14,061	33,608	15,415	18,193	37,640	16,899	20,741	43,729	19,361	24,368
Return @ 7.5%	18,340	9,170	9,170	19,701	9,851	9,850	20,714	10,357	10,357	21,547	10,774	10,773
Income Taxes @ 47% (Based on Return @ 7.5%)	6,405	3,203	3,202	6,542	3,271	3,271	6,833	3,417	3,416	7,112	3,556	3,556
Total Return and Income Taxes	24,745	12,373	12,372	26,243	13,122	13,121	27,547	13,774	13,773	28,659	14,330	14,329
Total System Transmission Costs of Service	$51,205	$24,772	$26,433	$59,851	$28,537	$31,314	$65,187	$30,673	$34,514	$72,388	$33,691	$38,697
ALLOCATION OF TOTAL SYSTEM TRANSMISSION COSTS OF SERVICE												
Basis of Allocation of Transmission Costs of Service:-												
Demand MMCF - Miles:-												
Emerson (U.S. Export) Sales	128,928-16.80%			128,928-14.12%			128,928-12.31%			128,928-11.02%		
Canadian Sales	638,372-83.20%			784,456-85.88%			918,366-87.69%			1,041,042-88.98%		
Total System	767,300-100.00%			913,384-100.00%			1,047,294-100.00%			1,169,970-100.00%		
Commodity (Annual) MMCF Miles:-												
Emerson (U.S. Export) Sales	43,693,952-15.77%			46,263,032-13.73%			46,392,592-12.54%			45,755,536-11.31%		
Canadian Sales	233,390,567-84.23%			290,737,409-86.27%			323,859,297-87.46%			358,640,286-88.69%		
Total System	277,084,519-100.00%			337,000,441-100.00%			370,251,889-100.00%			404,395,822-100.00%		
Allocation of Transmission Costs of Service:-												
Emerson (U.S. Export) Sales	$ 8,330	$ 4,162	$ 4,168	$ 8,328	$ 4,029	$ 4,299	$ 8,104	$ 3,776	$ 4,328	$ 8,090	$ 3,713	$ 4,377
Canadian Sales	42,885	20,610	22,265	51,523	24,508	27,015	57,083	26,897	30,186	64,298	29,978	34,320
Total	$51,205	$24,772	$26,433	$59,851	$28,537	$31,314	$65,187	$30,673	$34,514	$72,388	$33,691	$38,697
Weighted Average Pipeline Haul - Miles:-												
Emerson (U.S. Export) Sales		632.0	632.0		632.2	632.2		632.0	632.0		632.0	632.0
Canadian Sales		1,610.4	1,717.0		1,643.6	1,701.6		1,656.6	1,698.4		1,670.1	1,710.7

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TRANS-CANADA PIPE LINES LIMITED

ALTERNATE COMPARISON OF ESTIMATED REVENUES AND COSTS OF SERVICE (Including 7.5% Return)

FOR PROPOSED SALES TO MIDWESTERN GAS TRANSMISSION COMPANY AT EMERSON, MANITOBA (U.S. EXPORT)

Note:- Cost of Service on basis of allocated portion of Main Line Transmission Costs of Service West of Winnipeg plus 100% of Emerson Lateral Costs of Service.
(909 MMCF Input System Based on December, 1957 Interim Market Projection)

	1959-1960	1960-1961	1961-1962	1962-1963
ESTIMATED REVENUES (Per Exhibit B)	$18,941,372	$19,751,574	$19,827,496	$19,580,965
COST OF SERVICE				
Cost of Gas Purchased:-				
Av. Unit Cost of All Gas Purchased Per MCF @ 14.73# (Incl. $ .04092/MCF Alberta Trunk Gathering)	$ 0.15617	$ 0.15902	$ 0.16119	$ 0.16371
Annual Volumes of Gas Purchased for Sale At Emerson - MCF @ 14.73#	69,136,000	73,201,000	73,406,000	72,398,000
Total Cost of Gas Purchased for Sale at Emerson	$10,796,969	$11,640,423	$11,832,313	$11,852,276
Allocated Portion of Main Line Transmission Costs of Service (Incl. 7.5% Return) - West of Winnipeg	6,006,000	6,716,000	7,575,000	6,895,000
Emerson Lateral Transmission Cost of Service (Incl. 7.5% Return)	619,850	599,400	578,950	559,310
Total Costs of Service (Incl. 7.5% Return)	$17,422,819	$18,955,823	$19,986,263	$19,306,586
EXCESS (DEFICIENCY) OF REVENUE	$ 1,518,553	$ 795,751	$ (158,767)	$ 274,379

TRANS-CANADA PIPE LINES LIMITED

ALLOCATION OF TRANSMISSION COSTS OF SERVICE FOR PORTION OF MAIN LINE WEST OF WINNIPEG
(909 MMCF/Day Input System Based on December, 1957 Interim Market Projection)

	1959-1960			1960-1961			1961-1962			1962-1963		
TOTAL MAIN LINE TRANSMISSION COSTS OF SERVICE - WEST OF WINNIPEG	Total Costs (000's)	Demand Costs (000's)	Commodity Costs (000's)	Total Costs (000's)	Demand Costs (000's)	Commodity Costs (000's)	Total Costs (000's)	Demand Costs (000's)	Commodity Costs (000's)	Total Costs (000's)	Demand Costs (000's)	Commodity Costs (000's)
Cost of Gas Purchased for Fuel and Losses	$ 1,258	$ --	$ 1,258	$ 2,057	$ --	$ 2,057	$ 2,429	$ --	$ 2,429	$ 2,942	$ --	$ 2,942
Operation and Maintenance Expenses	1,231	616	615	2,102	1,051	1,051	2,385	1,193	1,192	2,948	1,474	1,474
Administrative and General Expenses	554	277	277	893	447	446	1,014	507	507	1,253	627	626
Depreciation @ 3.5%	4,263	2,131	2,132	5,270	2,635	2,635	5,499	2,749	2,750	6,190	3,095	3,095
Taxes - General	487	244	243	602	301	301	629	314	315	708	354	354
Total Before Return and Income Taxes	7,793	3,268	4,525	10,924	4,434	6,490	11,956	4,763	7,193	14,041	5,550	8,491
Return @ 7.5%	8,037	4,019	4,018	9,353	4,676	4,677	11,784	5,892	5,892	10,858	5,429	5,429
Income Taxes @ 47% (Based on Return @ 7.5%)	1,638	819	819	1,812	906	906	3,551	1,775	1,776	2,100	1,050	1,050
Total Return and Income Taxes	9,675	4,838	4,837	11,165	5,582	5,583	15,335	7,667	7,666	12,958	6,479	6,479
Total Transmission Costs of Service (W. of Winnipeg)	$17,468	$ 8,106	$ 9,362	$22,089	$10,016	$12,073	$27,291	$12,430	$14,861	$26,999	$12,029	$14,970
ALLOCATION OF TOTAL MAIN LINE TRANSMISSION COSTS OF SERVICE - WEST OF WINNIPEG												
Basis of Allocation:-												
Demand MMCF Miles:-												
Emerson (U.S. Export) Sales	119,544-34.56%			119,544-30.42%			119,544-27.30%			119,544-25.00%		
Canadian Sales (Incl. Sales E. of Winnipeg)	226,266-65.44%			273,459-69.58%			318,367-72.70%			358,640-75.00%		
Total - West of Winnipeg	345,810-100.00%			393,003-100,00%			437,911-100.00%			478,184-100.00%		
Commodity (Annual) MMCF Miles:-												
Emerson (U.S. Export Sale)	40,513,696-34.23%			42,895,786-30.39%			43,015,916-28.14%			42,425,228-25.97%		
Canadian Sales (Incl. Sales E. of Winnipeg)	77,852,557-65.77%			98,269,499-69,61%			109,837,686-71.86%			120,919,392-74.03%		
Total - West of Winnipeg	118,366,253-100.00%			141,165,285-100.00%			152,853,602-100.00%			163,344,620-100.00%		
Allocation of Transmission Costs of Service:-												
Emerson (U.S. Export) Sales	$ 6,006	$ 2,801	$ 3,205	$ 6,716	$ 3,047	$ 3,669	$ 7,575	$ 3,393	$ 4,182	$ 6,895	$ 3,007	$ 3,888
Canadian Sales (Incl. Sales E. of Winnipeg)	11,462	5,305	6,157	15,373	6,969	8,404	19,716	9,037	10,679	20,104	9,022	11,082
Total - West of Winnipeg	$17,468	$ 8,106	$ 9,362	$22,089	$10,016	$12,073	$27,291	$12,430	$14,861	$26,999	$12,029	$14,970

TRANS-CANADA PIPE LINES LIMITED

EXHIBIT C
Page 3.

TRANSMISSION COSTS OF SERVICE FOR PORTION OF MAIN LINE WEST OF WINNIPEG
(909 MMCF/Day Input System Based on December, 1957 Interim Market Projection)

WEST OF WINNIPEG (34" M.L. ONLY)	Without Emerson Sales (U.S. Export) 1957-1958 (000's)	1958-1959 (000's)	1959-1960 (000's)	1960-1961 (000's)	1961-1962 (000's)	1962-1963 (000's)	With Emerson Sales (U.S. Export) 1958-1959 (000's)	1959-1960 (000's)	1960-1961 (000's)	1961-1962 (000's)	1962-1963 (000's)
PLANT INVESTMENT Miles Begin of Year	(586 Mi.)	(586 Mi.)	(586 Mi.)	(586 Mi.)	(586 Mi.)	(586 Mi.)	(586 Mi.)	(586 Mi.)	(586 Mi.)	(586 Mi.)	(586 Mi.)
Gross Plant Investment (Begin. of Year):											
Pipelines:											
Direct Costs of Construction	$ 85,666	$ 85,666	$	$	$	$	$ 85,666	$	$	$	$
Interest During Construction	8,814	8,814					8,814				
Sub Total	94,480	94,480	94,480	94,480	94,480	94,480	94,480	94,480	94,480	94,480	94,480
Compressor Stations: H.P. Begin of Year		(30,000 HP)	(30,000 HP)	(34,000 HP)	(64,000 HP)	(97,400 HP)	(30,600 HP)	(62,600 HP)	(124,800 HP)	(145,000 HP)	(185,200 HP)
Direct Costs of Construction	-	12,232					12,232				
Interest During Construction	-	316					316				
Sub Total	-	12,548	12,548	13,855	30,033	51,234	12,548	27,363	56,141	62,961	82,431
Total Gross Plant Investment (Begin of Year)	$ 94,480	$ 107,028	$ 107,028	$ 108,335	$ 124,513	$ 145,714	$ 107,028	$ 121,843	$ 150,621	$ 157,171	$ 176,911
Less: Accrued Depreciation Reserves End of Year	3,305	7,049	10,793	14,583	18,939	24,037	7,049	11,311	16,582	22,081	28,271
Net Plant Investment End of Year	$ 91,175	$ 99,979	$ 96,235	$ 93,752	$ 105,574	$ 121,677	$ 99,979	$ 110,531	$ 134,039	$ 135,090	$ 148,640
RATE BASE											
Av. Net Plant Investment During Year		$ 95,577	$ 98,107	$ 94,994	$ 99,573	$ 113,626	$ 95,577	$ 105,255	$ 122,285	$ 134,565	$ 141,865
Plus: Materials & Supplies (1.25% of Gross Plt. Invest.)		1,338	1,338	1,354	1,556	1,821	1,338	1,523	1,883	1,965	2,211
Cash Working Capital (1/8 of O&M & Adm & Gen Exp)		144	142	148	223	306	144	123	374	425	525
Gas in Storage in Pipeline (Leave out)		158	161	165	169	173	150	161	165	169	173
Total Rate Base		$ 97,217	$ 99,748	$ 96,661	$ 101,521	$ 115,926	$ 97,217	$ 107,152	$ 124,707	$ 137,124	$ 144,774
COSTS OF SERVICE											
Cost of Gas Purchased-Comp. Stn. Fuel(W of Winnipeg only)		$ 131	$ 234	$ 412	$ 775	$ 1,344	$ 131	$ 928	$ 1,652	$ 1,982	$ 2,456
-Losses @ 1%		130	200	260	300	342	130	330	405	447	486
Operation & Maintenance Expense:											
Pipelines (586 Mi. of 34" @ $400/Mi.)		234	234	234	234	234	234	234	234	234	234
Compressor Stations ($14/HP)		428	428	476	896	1,364	428	876	1,747	2,030	2,593
Communications (586 Mi. @ $135/Mi.)		79	79	79	79	79	79	79	79	79	79
Meter Stations (7 @ $6,000/Stn)		42	42	42	42	42	42	42	42	42	42
Sub Total		783	783	831	1,251	1,719	783	1,231	2,102	2,385	2,948
Administrative & General Expense (1)		372	352	353	532	731	372	554	893	1,014	1,253
Depreciation (3.5% of Gross Plt.Invest. Begin of Yr. (2))		3,744	3,744	3,790	4,356	5,098	3,744	4,263	5,270	5,499	6,190
Taxes-General (.4% of Gross Plt.Invest. Begin of Yr)		428	428	433	498	583	428	487	602	629	708
Total Before Return & Income Taxes		5,588	5,741	6,079	7,712	9,817	5,588	7,793	10,924	11,956	14,341
Return @ 7.5%		7,291	7,481	7,250	7,614	8,694	7,291	8,037	9,353	11,784	10,356
Income Taxes @ 47%		1,912	2,067	1,645	1,227	1,511	2,289	1,638	1,812	3,551	2,100
Total Return & Income Taxes		9,203	9,548	8,895	8,841	10,205	9,580	9,675	11,165	15,335	12,456
Total Costs of Service		$ 14,791	$ 15,289	$ 14,974	$ 16,553	$ 20,022	$ 15,168	$ 17,468	$ 22,089	$ 27,291	$ 26,797
ANNUAL GAS SALES VOLUMES - MMCF @ 14.73#											
Canadian Sales - West of Winnipeg		13,555	14,800	15,875	17,403	18,523	13,555	14,800	15,875	17,403	18,523
Sales at Emerson (U.S. Export)		-	-	-	-	-	-	60,136	73,201	73,406	72,358
Canadian Sales - East of Winnipeg		76,319	121,133	154,991	172,281	191,124	76,319	121,133	154,991	172,281	191,124
Total Gas Sales		89,874	135,933	170,865	190,684	209,647	89,874	205,069	244,067	264,090	282,045
UNIT COSTS OF TRANSMISSION Per Mcf (@ 14.73#)		16.46¢	11.25¢	8.76¢	8.68¢	9.55¢	16.87¢	8.51¢	9.05¢	10.33¢	9.57¢

(1) 47.5% of O & M in 1958-1959; 45% in 1959-1960; 42.5% in 1960-1961; 40% in other years.
(2) Excludes $45,929 land in all years.

TRANS-CANADA PIPE LINES LIMITED

COSTS OF SERVICE EMERSON LATERAL (46 MI. of 24")

	1958-1959	1959-1960	1960-1961	1961-1962	1962-1963
PLANT INVESTMENT					
Gross Plant Investment End of Year	$3,968,000	$3,968,000	$3,968,000	$3,968,000	$3,968,000
Less: Accrued Depreciation Reserve End of Year	-0-	138,880	277,760	416,640	555,520
Net Plant Investment End of Year	$3,968,000	$3,829,120	$3,690,240	$3,551,360	$3,412,480
RATE BASE					
Av. Net Plant Investment During Year		$3,898,560	$3,759,680	$3,620,800	$3,481,900
Plus: Materials & Supplies (1¼% of Plt. Invest.)		49,600	49,600	49,600	49,600
Cash Working Capital (1/8 of Operating Expenses)		5,740	5,620	5,500	5,500
Gas in Storage in Pipeline (35,350 Mcf)		5,520	5,620	5,700	5,790
Total Rate Base		$3,959,420	$3,820,520	$3,681,600	$3,542,790
COSTS OF SERVICE					
Operation & Maintenance:					
Pipeline (@ $400/Mi.)	$ 19,200	$ 19,200	$ 19,200	$ 19,200	
Meter & Regulator Station	6,000	6,000	6,000	6,000	
Communications (@ $135/Mi.)	6,480	6,480	6,480	6,480	
Sub Total	31,680	31,680	31,680	31,680	
Administrative & General (1)	14,250	13,460	12,670	12,670	
Depreciation (3½% of Investment)	138,880	138,880	138,880	138,880	
Taxes - General (.4% of Gross Plant)	15,880	15,880	15,880	15,880	
Total Before Return & Income Taxes	200,690	199,900	199,110	199,110	
Return @ 7½%	296,960	286,540	276,120	265,210	
Income Taxes @ 47%	122,200	112,960	103,720	14,491	
Total Cost of Service	$ 619,850	$ 599,400	$ 578,950	$ 559,310	

(1) 45% of O & M in 1959-1960; 42.5% in 1960-1961; 40% in other years.

TRANS-CANADA PIPE LINES LIMITED

GAS SALES VOLUMES AND DEMAND AND COMMODITY MILES - WEST OF WINNIPEG
(Gas Sales Volumes Per December 1957 Interim Market Projection)

	Miles Haul	1959-1960 Gas Volumes MMCF	1959-1960 Demand (or Commodity) MMCF Miles	1960-1961 Gas Volumes MMCF	1960-1961 Demand (or Commodity) MMCF Miles	1961-1962 Gas Volumes MMCF	1961-1962 Demand (or Commodity) MMCF Miles	1962-1963 Gas Volumes MMCF	1962-1963 Demand (or Commodity) MMCF Miles
GAS SALES VOLUMES:- @ 14.73#									
Annual:-									
Canadian Sales:-									
Saskatchewan Power Corp.	203	3,650	740,950	3,650	740,950	3,650	740,950	3,650	740,950
Plains Western Gas & Elec. Co.	451	1,540	694,540	1,666	751,366	1,807	814,957	1,897	855,547
Inter-City Gas Limited	See Note	1,291	658,023	1,739	889,777	1,932	991,077	2,032	1,042,375
Winnipeg & Central Gas Co.	574	8,319	4,775,106	8,820	5,062,680	10,014	5,748,036	10,944	6,281,856
Sales E. of Winnipeg	586	121,133	70,983,938	154,991	90,824,726	173,281	101,542,666	191,124	111,998,664
Sub-Total		135,933	77,852,557	170,866	98,269,499	190,684	109,837,686	209,647	120,919,392
Midwestern Gas Trans. Co. (U.S. Export)	586	69,136	40,513,696	73,201	42,895,786	73,406	43,015,916	72,398	42,425,328
Total		205,069	118,366,253	244,067	141,165,285	264,090	152,853,602	282,045	163,344,620
Maximum Day Demand:-									
Canadian Sales:-									
Saskatchewan Power Corp.	203	10,000	2,030	10,000	2,030	10,000	2,030	10,000	2,030
Plains Western Gas & Elec. Co.	451	7,672	3,460	8,300	3,743	9,000	4,059	9,450	4,269
Inter-City Gas Limited	See Note	9,560	4,873	10,825	5,539	12,075	6,194	12,680	6,504
Winnipeg & Central Gas Co.	574	36,600	21,008	38,800	22,271	46,400	26,634	51,040	29,297
Sales E. of Winnipeg	586	332,586	194,895	409,345	239,876	476,877	279,450	540,170	316,540
Sub-Total		396,418	226,266	477,270	273,459	554,352	318,367	623,340	358,640
Midwestern Gas Trans. Co. (U.S. Export)	586	204,000	119,544	204,000	119,544	204,000	119,544	204,000	119,544
Total		600,418	345,810	681,270	393,003	758,352	437,911	827,340	478,184

Note:-
Inter-City Gas Limited Pipeline Haul (Wtd. Av.):- 1959-1960 - 509.7 | 1960-1961 - 511.66 | 1961-1962 - 512.98 | 1962-1963 - 512.98

Exhibit - C - 25 - 2

TRANS-CANADA PIPE LINES LIMITED

COMPARISON OF ESTIMATED REVENUES AND COSTS OF SERVICE (Including 7.5% Return),
FOR PROPOSED SALES TO CANADIAN MARKETS

	1959-1960	1960-1961	1961-1962	1962-1963
ESTIMATED REVENUES FROM CANADIAN MARKETS	$55,000	$71,000	$80,000	$89,000
COST OF SERVICE				
Av. Unit Cost of all Gas Purchased @ 14.73# (Incl. $ .04092/MCF Alberta Trunk Gathering)	$ 0.15617	$ 0.15902	$ 0.16119	$ 0.16371
Annual Volumes of Gas Purchased for Canadian Sales @ 14.73#	135,933	170,866	190,684	209,647
Total Cost of Gas Purchased for Canadian Sales	$21,200	$27,150	$30,750	$34,250
Allocated Portion of Total System Transmission Cost of Service	42,885	51,523	57,080	64,298
Total Cost of Service (Incl. 7.5% Return)	$64,085	$78,673	$87,830	$98,548
Deficiency of Revenue	($9,085)	($8,673)	($7,830)	($9,548)
Unit Deficiency of Revenue	$ 0.0668/MCF	$ 0.0508/MCF	$ 0.0411/MCF	$ 0.0455/MCF

Mrs Borden

EXHIBITS C - 25 - 3

C-1
2
-5422

PEAT, MARWICK, MITCHELL & CO.
CHARTERED ACCOUNTANTS

508-309 8TH AVENUE WEST
CALGARY, ALTA.

MONTREAL
ST. JOHN'S, NFLD. TORONTO
HAMILTON LONDON
WINNIPEG SASKATOON
CALGARY EDMONTON
PRINCE GEORGE VANCOUVER

UNITED STATES
GREAT BRITAIN SOUTH AMERICA
AFRICA INDIA
AUSTRALIA JAPAN
CUBA MALAYA
CHINA MEXICO
EUROPE

SIGNED COPY

Accountants' Report

The Board of Directors

Trans-Canada Pipe Lines Limited

We have examined the consolidated balance sheet of Trans-Canada Pipe Lines Limited and subsidiary companies. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying consolidated balance sheet presents fairly the consolidated financial position of Trans-Canada Pipe Lines Limited and subsidiary companies at July 31, 1954, in conformity with generally accepted accounting principles applied on a consistent basis as shown by the books of the companies.

Calgary, Alberta
October 18, 1954

Peat, Marwick, Mitchell & Co.
Chartered Accountants

TRANS-CANADA PIPE LINES LIMITED
AND SUBSIDIARY COMPANIES

Consolidated Balance Sheet
July 31, 1954
(Stated in Canadian Dollars)

Assets

Fixed assets (including survey and other preliminary costs):		
Trans-Canada line, survey and other preliminary costs - (Note 2)		$ 3,129,167.43
Niagara line, construction work in progress - at cost (Notes 3 and 6)		2,954,740.67
Inter-field grid system, preliminary and other costs - (Note 4)		109,930.42
Office furniture and fixtures - at cost	$ 15,675.26	
Less allowance for depreciation	715.50	14,959.76
Automotive equipment - at cost	9,045.00	
Less allowance for depreciation	797.77	8,247.23
		6,217,045.51
Current assets:		
Cash on hand and in banks		215,118.13
Organization expenses:		
Legal fees	23,938.80	
Other expenses	12,128.80	36,067.60
		$ 6,468,231.24

Liabilities

Shareholders' equity:		
Capital stock (Note 5):		
Preferred:		
Authorized 1,000,000 non-voting shares of a par value of $50.00 per share (none of which are issued and outstanding)		$ -
Common:		
Authorized 10,000,000 shares of a par value of $1.00 per share; issued and outstanding 2,002 shares		2,002.00
Excess of interest charged to construction over interest expense (Note 6)		13,477.76
		15,479.76
Due to shareholders (Note 7):		
Canadian Delhi Oil Ltd.	$ 2,070,702.83	
Western Pipe Lines Syndicate	1,253,007.05	3,323,709.88
Current liabilities:		
Due to banks - demand loans (Note 8)	3,075,000.00	
Due to shareholders - Western Pipe Lines Syndicate	2,535.41	
Accounts payable	51,506.19	3,129,041.60
Commitments (Note 9)		
		$ 6,468,231.24

The accompanying notes 1 to 9 form an integral part of the consolidated balance sheet at July 31, 1954.

TRANS-CANADA PIPE LINES LIMITED
AND SUBSIDIARY COMPANIES

Notes to Consolidated Balance Sheet
July 31, 1954

1. Principles of Consolidation:

The consolidated balance sheet includes the accounts of Trans-Canada Pipe Lines Limited and its wholly owned subsidiaries Trans-Canada Grid of Alberta Ltd., Western Pipe Lines and Alberta Inter-Field Gas Lines Limited.

All of the activities of Trans-Canada Pipe Lines Limited have been in the nature of survey and other preliminary costs in respect of a gas transmission line.

Trans-Canada Grid of Alberta Ltd. is a non-operating company.

The expenditures of Western Pipe Lines were in the first instance incorporation costs and preliminary costs in respect to a gas transmission line, the building of which is now to be undertaken by Trans-Canada Pipe Lines Limited; all expenditures made by Western Pipe Lines in respect of the incorporation and preliminary costs referred to above which amounted to $664,682.39 have been taken over by Trans-Canada Pipe Lines Limited in consideration of its liquidating a liability of Western Pipe Lines of a similar amount. Western Pipe Lines is presently constructing a gas transmission line from Niagara to Toronto in the Province of Ontario, Canada.

The expenditures of Inter-Field Gas Lines Limited (with the exception of its incorporation expenses) have been preliminary costs in respect of an inter-field grid gas transmission system.

Inter-company balances have been eliminated in the consolidation.

All expenditures to date have been capitalized and therefore there is no statement of profit and loss.

2. Trans-Canada line, survey and other preliminary costs - $3,129,167.43:

Trans-Canada Pipe Lines Limited has expended for preliminary survey and other expenses, in connection with applications for a permit to build a pipe line for transportation of natural gas (including the preliminary costs originally incurred by Western Pipe Lines amounting to $653,892.19), the following sums:

Geological	$ 546,965.06
Legal	404,992.22
General and administrative expenses, including officers salaries of $110,110.82 and management fees of $80,000	416,611.05
Engineering services	1,760,599.10
	$ 3,129,167.43

3. Niagara line, rental agreement:

Western Pipe Lines who are presently constructing a gas transmission line as referred to in Note 1, has agreed with a public utility distribution company to lease to it the said line on the following terms and conditions.

The term of the lease is for a period of five years from the date when the construction of the line is completed or until Alberta gas is available to Ontario markets, whichever is the shorter period. The annual rental payable by the public utility company shall be an amount equal to the annual carrying and financing charges payable by Western Pipe Lines in respect of the capital cost of the line plus depreciation at the maximum rates allowed by the Income Tax Division but such rates of depreciation not to exceed 6% on the reducing balance basis as prescribed by regulation under the Income Tax Act. The public utility company has agreed to pay all the operating and maintenance costs of the line during the term of the lease.

4. Inter-field grid system, preliminary and other costs - at cost - $109,930.42:

Alberta Inter-Field Gas Lines Limited has expended for preliminary and other costs in connection with an inter-field grid gas transmission system the following sums:

Legal		$ 22,311.64
General and administrative:		
General office supplies and expenses	$ 7,872.44	
Professional fees	3,234.68	
Rents	3,484.00	14,591.12
Engineering:		
Salaries of officers	35,765.73	
Other engineering services	37,261.93	73,027.66
		$ 109,930.42

5. Capital stock:

2,002 shares, being all of the issued common shares of $1.00 par value of Trans-Canada Pipe Lines Limited at July 31, 1954 were issued for a cash consideration of $2,002.00. Subsequent to July 31, 1954, 415,463 common shares of $1.00 par value were issued in satisfaction of liabilities to shareholders at July 31, 1954 in the amount of $3,323,709.88. Additional advances have been and will be made by shareholders and for each eight dollars so advanced Trans-Canada Pipe Lines Limited will issue one common share of $1.00 par value in full satisfaction of funds so advanced.

5. Capital stock - continued:

Trans-Canada Pipe Lines Limited has agreed to offer to a senior official, at some time prior to a public offering, 50,000 of the company's $1.00 par value common shares at the then fair market value thereof which shall not be more than $8.00 per share.

6. Excess of interest charged to construction over interest expense - $13,477.76:

Interest has been charged to construction of the Niagara line at the rate of 7% on the average monthly balance of the progress payments made to the contractor. The total of the interest so charged is $26,033.18 which amount has been capitalized in the cost of the Niagara line. The offsetting credit has been set up under the above heading and has been reduced by an amount of $12,555.42 being interest expense to July 31, 1954.

7. Due to shareholders - $3,323,709.85:

Subsequent to July 31, 1954 these liabilities have been settled as follows:

Canadian Delhi Oil Ltd. by the allotment and issue of 258,838 common shares of $1.00 par value of Trans-Canada Pipe Lines Limited.

Western Pipe Lines Syndicate by the allotment and issue of 156,625 common shares of $1.00 par value of Trans-Canada Pipe Lines Limited.

In addition, 66,625 and 50,000 common shares have been issued to Canadian Delhi Oil Ltd. and Western Pipe Lines Syndicate, respectively, in settlement of advances of $525,000 and $400,000 received therefrom subsequent to July 31, 1954.

8. Due to banks - demand loans - $3,075,000.00:

Of the above amount $2,975,000.00 has been incurred by Western Pipe Lines. An agreement is presently being prepared between Western Pipe Lines and the two banking institutions who have and are advancing monies to Western Pipe Lines. Under the agreement Western Pipe Lines will agree to create a debenture issue and the banking institutions will undertake to each purchase debentures in satisfaction of the banking indebtedness of Western Pipe Lines. In addition the banking institutions will agree in connection with the financing of the pipe line to purchase additional debentures at the request of Western Pipe Lines until such time as each institution has purchased or acquired a total of $3,750,000.00 par value of such debentures.

The terms and conditions of the debentures have not been finalized but it is anticipated that the debentures will be dated May 1,

Notes to Consolidated Balance Sheet - Continued
July 31, 1954

8. Due to banks - demand loans - $3,075,000.00 - continued:

1954 to mature November 1, 1959 and will carry interest at the rate of 4 3/4% per annum.

9. Commitments:

Trans-Canada Pipe Lines Limited is presently making arrangements for the construction of a Trans-Canada gas transmission line but at July 31, 1954 and at the date of this report no contracts have been entered into by the company in respect of the construction of the line; however, the company has entered into a contract in respect of the engineering of the gas transmission line. Under this contract the company has agreed to payments aggregating $22,500,000.00 for this service. At July 31, 1954 the company had paid $350,000.00 of this amount in accordance with the terms of the contract.

Western Pipe Lines has entered into contracts for the engineering and construction of the gas transmission line referred to in Note 3 and is committed under such contracts in the approximate aggregate amount of $2,200,000.

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Exhibit C-2-7

Home Oil Company Limited

Analysis of Share Ownership

	Shareholder	Shares	Equity
Class A			
Canadian	[illegible]	[illegible]	[illegible] %
Non-Resident	[illegible]	[illegible]	[illegible] %
Class B			
Canadian	[illegible]	[illegible]	[illegible] %
Non-Resident	[illegible]	[illegible]	[illegible] %
Total A + B			
Canadian	[illegible]	[illegible]	[illegible] %
Non-Resident	[illegible]	[illegible]	[illegible] %
	[illegible]	[illegible]	

February 21, 1955

Exhibit - R - 14 - 2

para. 5 - starting "Percentagewise, therefore, it might be stated..." change 80% to read 86%, and change 70% to read 73%

B. 1 p. 14

Under (i) "Audits Branch ... this Branch is responsible ..." change "not royalty lease payments" to read "net royalty lease payments."

B. 3 p. 20

Insert between the second and third lines the words "seismic instrumentation of which the versatile magnetic tape recorder and" ..

B. 4 p. 23

Second line change "50%" to read "40%".

B. 4 p. 25

(ii) Net Royalty Leases .. third line change "prices" to read "cost".

I. Change "Regulatory royalty with the 12 1/2% floor" to read "Regulatory royalty with no 12 1/2% floor."

B. 5 p. 35

Line seven, change "coming" to read "coning".

C. 4 p. 38

third last line change "oil pools in structural lows" to read "oil pools which exist in structural lows".

C. 4 p. ~~35~~ 40, para. 4

second line change
"(i) ultimate oil in place - 17×10^{12} stock tank barrels"
to read
"(i) ultimate oil in place - 17×10^{9} stock tank barrels"

C. 4 p. 40, para. ~~4~~

line ~~seven~~ eight change to read

"$17 \times 10^{9} \times 500 \times 0.30 \times 0.75 \times 0.90 = 1.7 \times 10^{12}$ cubic feet".

PART II - A. 1 p. 41, para. 1

Penultimate line change "A 50-mile line has been built" to read "Fifty miles of gathering and transmission lines have been built."

PART III - B. 3 p. 74

Heading reads "Cash Purchase Agreements" should read "Gas Purchase Agreements."

B. 7 p. 79

para. 4, first line, change "chmical" to read "chemical"

Table 1, change "1975" to read "1965".

C. 2 p. 86

Change heading to read "Estimated Consumption and Peak Demand".

Table 22, Column I, change "1956" to read "1965"

C. 3 p. 86

Second para. second line change "gas gaps" to read "gas caps".

MINISTER OF MINERAL RESOURCES

REGINA, Saskatchewan,
January 6, 1958.

Honourable George Hees,
Minister of Transport,
OTTAWA, Ontario.

Dear Mr. Hees:

I would like to call to your attention some of the problems arising concerning The Pipe Lines Act (Canada) and The Pipe Lines Act (Saskatchewan). Difficulty arises in determining jurisdiction over pipe lines to give Canada the authority and responsibility to control interprovincial trade and traffic, and at the same time to leave undisturbed, the right and responsibility of the province to regulate and control the development and use of its natural resources. Perhaps the difficulty can best be illustrated by a recital of some of the events that have taken place, the circumstances which presently exist, and the probability of further confusion and trouble.

In 1955 Westspur Pipe Lines Company and others made application to The Board of Transport Commissioners for permission to construct a pipe line from Cromer, Manitoba which is a pumping station on the Interprovincial Pipe Line Company line, to a point in Saskatchewan near Midale. After a hearing by the Board, permission was granted. I can have no quarrel with this as I recognize Canada's responsibility to control and regulate interprovincial trade and transportation.

Subsequently in 1956 the Trans Prairie Pipe Line Company (which is not a special act company as defined in The Pipe Lines Act (Canada) made application to me to construct a pipe line from Midale to the Weyburn oil field. Obviously this pipe line was for the purpose of transporting oil from the Weyburn field to Midale and there putting it into the Westspur line. We granted this permission, but before permission was granted Westspur made application for the same privilege to The Board of Transport Commissioners. Westspur being a Special Act company, had no choice under the terms of The Pipe Lines Act (Canada) but to make its application to the Board of Transport Commissioners even though

the pipe line in question was entirely within the province of Saskatchewan.

The Board of Transport Commissioners dismissed the application of Westspur because a pipe line was being constructed on the location by Trans-Prairie Pipe Line Company and it was not considered to be in the public interest to duplicate the service. The Board however maintained that they had full authority to give the permission or to dismiss the application.

In 1957 a new company known as Producers Pipe Lines Company (not a Special Act Company) was organized. This company is owned by the same people who own Westspur but is not a subsidiary of Westspur.

Producers Pipe Lines Company made application to me for permission to construct some transmission lines and gathering systems all wholly within Saskatchewan, but connecting to the Westspur line. This permission was granted on March 18, 1957.

The owners of Westspur and Producers desired to have the Producers Pipe Lines Company own and operate all the collecting systems and branch lines which they own in both companies and which lie wholly within the Province of Saskatchewan. Therefore Westspur Pipe Lines Company made application to The Board of Transport Commissioners for permission to transfer such assets to Producers. The Board heard the application on November 5, 1957 and on December 5 issued a judgment dismissing the application. In its judgment dated December 5, 1957, the Board stated as follows: "The Board has concluded that the language of Section 10A plainly and unequivocally prohibits Producers from operating the lines in question since it is a Provincial company and not a Special Act company and since the Board has already found that the lines would, after the sale, continue to be part of an extra-provincial pipe line."

However at this time we have a number of other pipe lines wholly within Saskatchewan which have been constructed on the authority of permission from the Province and these lines are connected to interprovincial lines and are being operated by companies which do not have permission from the Board of Transport Commissioners. I would therefore say there is considerable confusion and uncertainty in the question of jurisdiction over pipe lines.

I do not think it is necessary or desirable to allow this situation to continue. Surely it is possible to amend the Pipe Lines Act of the respective jurisdictions to eliminate at least most of the confusion and uncertainty.

I would suggest that the definition of "pipe line" and "extra-provincial pipe line" in the Pipe Lines Act (Canada) be amended so as to include in the federal jurisdiction only the inter-provincial trunk lines and the necessary appurtenances thereto and to exclude branch lines, feeder lines, gathering lines and delivery and distribution lines and the necessary appurtenances thereto, wholly within the province. Such a division would still leave a boundary line between the two jurisdictions where there could be occasional problems but would eliminate the broad field of overlapping authority where most problems now occur. The Pipe Lines Act (Saskatchewan) could be amended then to exclude pipe lines which are included under your Act.

Such an arrangement would leave the Federal authorities in control of interprovincial trade and traffic and leave the province undisputed rights to control and regulate the development and use of our oil and gas resources.

I would be very happy to have representatives from your department and my department meet to discuss this question and to endeavour to find a solution.

Yours sincerely,

J. H. Brockelbank,
Minister of Mineral Resources

JHB:MH

cc: Hon. T. C. Douglas, Premier
cc: Mr. James T. Cawley

COPY

SUPPLEMENTARY COMMENTS ON BRIEF TO ROYAL COMMISSION ON ENERGY
BY J. H. BROCKELBANK - APRIL 14,1958.

FOLLOWING SECTION 3 - PIPE LINE JURISDICTION - PAGE 46.

MR. CHAIRMAN:

With your permission I would like to add a few supplementary remarks at this point on this question of pipe line jurisdiction. I would not suggest that this is the most implrtant question your Commission will have to consider, but I believe it is very important and one which could lead to a good deal of trouble, which in my opinion is quite unnecessary.

Let me first say that no blame should rest on the Board of Transport Commissioners for the situation which has arisen. They are bound to be guided in their actions by the Pipe Lines Act of Canada. Consequently on one occasion the Board was compelled to state that an Inter-provincial Pipe Line Company could not sell its gathering and feeder lines to a Provincial Pipe Line Company because that Provincial Pipe Line Company would have no authority to operate those lines. However, at that time and at the present time a number of Provincial pipe line companies own and operate gathering, feeder and delivery pipe lines, which are connected to the Inter-provincial Pipe Line exactly in the same way as in the former case I referred to.

If in the one case it is possible for the Board of Transport Commissioners to prevent a Provincial Company from taking over and operating feeder and gathering lines it stands to reason that on application of any interested party, concerning one of the Provincial pipe lines now in operation that the Board of Transport Commissioners might have no choice but to give a similar decision. Step by step the rightful jurisdiction of the Province could be completely nulified with grievous harm to the Province. It has already been pointed out that

the legal but illogical extension of Federal jurisdiction could completely frustrate the Province in its efforts to manage and control its resources.

The next Section in our Brief is No. 4 - Control of Pipe Line Tariffs, but before I read it I would like to follow up a little further possible bad results from this tangled skein of jurisdiction over pipe lines.

Let us suppose that a large producer of oil or in fact a number of producers in an oil field own and operate a pipe line under a Provincial Pipe Lines Act, transporting their oil to an inter-provincial pipe line on its way to market. To my knowledge no company or companies in Saskatchewan have taken advantage of such a situation, but if they were so inclined they could in fact charge themselves a very high rate for transporting the oil and thus reduce the field price and so pay less royalty to the Provincial Government. A company might even have such an incentive from an advantage to be gained in regard to income tax. Such action might also severely injure small producers who had no other choice but to use that pipe line.

If the Province took action to make such a pipe line a common carrier and to examine the tariffs of the Company a special Act or Inter-provincial Pipe Line Company might be organized. It might make application to the Board of Transport Commissioners for permission to purchase the Provincial line in question.

The Board of Transport Commissioners would have a difficult situation before it and in the light of previous decisions could hardly dismiss the application.

In Alberta the Trunk Line Gas Gathering System was set up under a separate provincial company with the obvious objective of preserving

provincial jurisdiction over their resources. Who can say that even this device will safeguard provincial rights in the fact of present federal law.

In my opinion there is no need for this situation to exist. Representatives of this Province will be very happy to discuss with representatives of the Federal Government a solution to this serious problem. At the present time this great net of jurisdiction set up under the Pipe Lines Act of Canada casts a dark shadow on Provincial rights and Provincial authorities to manage and control their resources.

Attached to these remarks is a copy of a letter I wrote to the Honourable George Hees, Minister of Transport on January 6th, 1958 on this subject. The letter adds some details which I hope will be of value to you.

CAI
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-1957

Exhibit R-15-1.

STATEMENT OF PRODUCTION AND PRODUCTION OF SPERLMAN GAS PLANT

	MMcf/d. Raw Gas		% Available Residue	Residue	Imp. Gal/d. Propane	Imp. Gal/yr Propane	Imp. Gal/d. Butane	Imp. Gal/yr. Butane	Gasoline Imp. Gal/d.	Gasoline Imp. Gal/yr.	Sulphur	Sulphur
1956	25.0	3.0	16.7	2.0	54.3	6.6	33.0	4.0	20.9	2.5	14.5	1764
1957	31.7	11.6	21.1	7.7	68.8	25.1	41.8	15.3	26.5	9.7	18.4	6716
[illegible]	[illegible]	[illegible]	33.0	13.0	97.7	35.7	59.4	21.7	37.7	13.8	26.1	9527
1958	45.0	16.4	30.0	11.0	97.7	35.7	59.4	21.7	37.7	13.8	26.1	9527
1959	45.0	16.4	30.0	11.0	97.7	35.7	59.4	21.7	37.7	13.8	26.1	9527
1960	45.0	16.4	30.0	11.0	97.7	35.7	59.4	21.7	37.7	13.8	26.1	9527
1961	45.0	16.4	30.0	11.0	97.7	35.7	59.4	21.7	37.7	13.8	26.1	9527
1962	42.0	15.3	28.0	10.2	91.1	33.2	55.4	20.2	35.2	12.8	24.4	8906
1963	39.0	14.2	26.0	9.5	84.6	30.9	51.5	18.8	32.6	11.9	22.6	8249
1964	36.0	13.1	24.0	8.8	78.1	28.5	47.5	17.3	30.1	11.0	20.9	7629
1965	33.0	12.0	22.0	8.0	71.6	26.1	43.6	15.9	27.6	10.1	19.1	6972
		151.2		101.2		328.9		200.0		127.0		87871

% After fuel gas est. 7%

(Copied from submission to Oil and Gas Conservation Board by Provo Gas Producers Limited - May, 1957)

- M Borden

R-13-4

C O P Y

WOODLEY CANADIAN OIL COMPANY
Box 1403
Houston 1, Texas

April 25, 1958

Marlin E. Sandlin
President

Henry Borden, Esq., C.M.G., Q.C.,
Chairman,
Royal Commission on Energy,
Ottawa, Canada.

Dear Mr. Borden:

As a supplement to my testimony before your Commission at Regina on Tuesday, April 15, and Wednesday, April 16, 1958, I respectfully ask that you incorporate in the record the following statements, to-wit:

(1) Approximately thirty-six per cent (36%) of the 1957 net income of our parent company, Woodley Petroleum Company, was derived from our oil producing operations in Saskatchewan, on the basis of the Consolidated Income Statement of Woodley Petroleum Company and Woodley Canadian Oil Company.

(2) Since Canada is now experiencing a substantial slow-down in exploration for oil and gas in this period of recession, positive action in the next session of the Dominion Parliament to revise the income tax laws as recommended would have a stimulating effect to induce more Canadian capital and more United States capital to speed up the exploration activities in all of Canada and would unquestionably bring about a more intensive long-range program of exploration and development of the oil and gas resources of Canada.

(3) The Honorable J.H. Brockelbank, Minister of Mineral Resources, in his letter of January 6, 1958, to Honorable George Hees, Minister of Transport, Ottawa, Ontario (which letter was offered by the Government of Saskatchewan in support of its submission), made recommendations with respect to the amendment of the Pipe Lines Act of Canada and the Pipe Lines Act of Saskatchewan as follows:

"I would suggest that the definition of 'pipe line' and 'extra provincial pipe line' in the Pipe Lines Act (Canada) be amended so as to include in the federal jurisdiction only the inter-provincial trunk lines and the necessary appurtenances thereto and to exclude branch lines, feeder lines, gathering lines and delivery and distribution lines and the necessary appurtenances thereto, wholly within the province. Such a division would still leave a boundary

line between the two jurisdictions where there could be occasional problems but would eliminate the broad field of overlapping authority where most problems now occur. The Pipe Lines Act (Saskatchewan) could be amended then to exclude pipe lines which are included under your Act.

"Such an arrangement would leave the Federal authorities in control of interprovincial trade and traffic and leave the province undisputed rights to control and regulate the development and use of our oil and gas resources."

It is my understanding, also, that as the "necessary appurtenances" to interprovincial trunk lines, Mr. Brockelbank would include all tanks, reservoirs, pumps, racks, loading facilities, inter-station systems of communication by telephone or telegraph or radio, and property, real or personal, and works necessary for the operation of the company pipe line, but would exclude extensions, gathering systems, branch lines or feeder lines and appurtenances thereto, if they are situated wholly within a province, whether they are used for delivering oil or gas to the company pipe line or for taking oil or gas from the company pipe line, and whether they are connected to the company pipe line or not.

The foregoing solution to the question of jurisdiction over pipe lines in Canada appears to me to be a reasonable approach and one that I recommend be given serious consideration by the Commission as a proper division of authority between the Dominion Government on the one hand and the Provincial Government on the other hand.

Yours sincerely,

Sgd.

Marlin E. Sandlin
President

MES/em

Exhibit R-17-3.

444,330	115,326	25.8	429,257	119,004	27.7	[illegible]	71,960	[illegible]
195,240	47,792	24.5	222,890	49,963	22.4	[illegible]	20,231	53.7
132,210	31,069	23.5	135,594	23,906	17.6	167,555	1,210	17.7
1,800	-	-	1,860	-	-	5,688	-	-
6,690	2,279	34.1	6,386	1,790	28.0	5,496	[illegible]	14.3
13,440	1,615	12.0	13,826	4,551	32.9	15,283	[illegible]	30.3
5,640	-	-	5,820	-	-	5,828	[illegible]	-
802,350	193,081	24.7	815,641	199,214	24.4	933,400	93,990	33.5

109,710	61,398	56.0	113,460	77,000	67.9	117,846	[illegible]	67.7
7,080	5,730	80.6	9,765	7,721	79.0	9,796	[illegible]	92.9
106,980	596,603	55.7	109,244	61,653	56.4	132,609	[illegible]	53.7
229,320	102,734	46.6	239,227	109,327	45.7	249,725	121,779	49.2
[illegible]	955	29.5	3,255	532	16.3	3,348	[illegible]	25.4
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

	November, 1957			December, 1957			January, 1958		
	Total I.P.R.'s(1)	Total Production(2)	%	Total I.P.R.'s (1)	Total Production(2)	%	Total M.P.R.'s (1)	Total Production(2)	%
	15,960	6,954	43.6	16,089	7,095	44.1	-	-	-
	I.P. test only	127	-	1,240	746	60.2	1,240	1,274	102.7
	3,240	-	-	3,348	-	-	3,348	-	-
	7,140	2,288	32.0	7,347	2,966	40.4	7,347	2,731	37.2
	608,790	158,830	26.1	639,468	201,173	31.4	672,483	194,823	29.0
	15,870	11,590	73.0	16,523	13,497	81.7	16,523	13,186	79.8
	45,240	20,149	44.5	45,105	25,608	56.8	43,865	24,124	55.0
	153,480	128,959	84.0	87,203	67,896	77.8	92,008	74,569	81.0
	3,450	1,847	53.5	3,534	2,007	56.8	3,472	1,782	51.3
	3,360	1,330	39.6	3,813	1,414	37.1	3,410	1,677	49.2
	43,410	22,105	50.9	44,206	23,191	52.5	45,136	19,661	43.5
		Nil	-		Nil		1,620,959	464,679	28.6
	1,102,180	780,891	48.7	1,604,374	819,858	51.1	3,229,363	1,272,566	39.4
		58,928	56.7	111,135	69,098	62.2	137,477	86,039	65.3
		60,820	90.3	27,900	24,994	89.6	29,[illegible]	27,197	91.7

	67,240	10,378	98.1	244,903	216,833	91.2	260,552	240,226	73.1
	10,981	1,[illegible]	77.2	152,580	109,163	[illegible]	166,890	138,432	66.7
	6,840	[illegible]	[illegible]	7,062	[illegible]	[illegible]	7,099	4,119	[illegible]
	34,260	[illegible]	73.8	35,734	29,268	[illegible]	12,679	[illegible]	[illegible]
	90,780	[illegible]	84.9	65,193	51,760	[illegible]	66,597	[illegible]	[illegible]
	[illegible]	[illegible]	84.6	4,185	–	–	[illegible]	–	–
	320,520	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3,900	[illegible]	87.3	2,635	2,402	[illegible]	2,573	2,112	[illegible]
	51,840	[illegible]	71.3	[illegible]	[illegible]	[illegible]	64,759	52,284	[illegible]
	1,136,340	853,163	75.1	[illegible]	[illegible]	[illegible]	1,190,803	1,027,108	[illegible]
	1,283,500	[illegible]	33.6	1,400,022	532,851	[illegible]	290,904	132,040	[illegible]
	32,430	10,491	[illegible]	31,589	13,160	[illegible]	32,395	13,366	[illegible]
	9,750	[illegible]	74.7	14,292	[illegible]	75.9	13,671	11,035	[illegible]
	[illegible]	[illegible]	58.5	3,659,085	2,314,609	[illegible]	2,630,403	[illegible]	75.9
	[illegible]	[illegible]	30.4	82,294	27,027	[illegible]	69,395	[illegible]	35.0
	[illegible]	[illegible]	70.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	90.8

	November, 1951		December, 1951		January, 1952	
	Total M.P.R.'s(1)	Total Production (2) B	Total M.P.R.'s(1)	Total Production(2) B	Total M.P.R.'s(1)	Total Production (2) B
	181,339		199,192		200,259	
	4,186		5,975		6,164	
	65,096		83,863		72,135	
	6,116		9,132		12,120	
	[illegible]		66,543		63,096	
	257,647		365,706		353,774	
	[illegible]		46,152		50,712	
	3,360,43[illegible]		3,802,566		3,835,753	

(1) Oil and Gas permitted.

Less production not under M.P.R. control

(2) No crude types.

INTERPROVINCIAL PIPE LINE COMPANY

COMPOSITE TARIFF RATE - ALL MOVEMENTS 1957 — 4.33 CENTS PER 100 MILE BARRELS

EDMONTON TO SARNIA — 3.67 PER 100 MILE BARRELS

EXPENSES - CENTS PER 100 MILE BBLS.

	1955	1956	1957
OPERATING EXPENSES	.73	.77	.75
TAXES - OTHER THAN INCOME TAXES	.23	.20	.22
DEPRECIATION	.85	.74	.82
INTEREST ON LONG TERM DEBTS	.71	.55	.56
	2.52	2.26	2.35
INCOME TAXES PAID	.48	.69	.70
TOTAL EXPENSES AND INCOME TAXES PAID	3.00	2.95	3.05
DIVIDENDS PAID	.43	.55	.74
TOTAL EXPENSES AND DIVIDENDS	3.43	3.50	3.79
COMPOSITE REVENUE			4.33
SURPLUS - OVER EXPENSES AND DIVIDENDS			.54
REVENUE - EDMONTON TO SARNIA MOVEMENT	3.67	3.67	3.67
SURPLUS - OVER ALL EXPENSES AND DIVIDENDS	.24	.17	(.12)

Border

Exhibit 11-22-1

INTERIM BRIEF

submitted by

THE DEPARTMENT OF MINES

PROVINCE OF NOVA SCOTIA

TO

THE ROYAL COMMISSION ON ENERGY

INTERIM BRIEF

submitted by

THE DEPARTMENT OF MINES

TO

THE ROYAL COMMISSION ON ENERGY

While Canada is fortunate in having within its own boundaries sources of energy, such as coal, oil, natural gas, water and uranium, the long range conception of national progress definitely requires a vital and progressive coal industry. It is considered opinion of experts in the energy field that the large scale use of coal will be essential for the continued growth and economic development of Canada. This cannot be achieved if the markets for coal continue to decline with resultant closure of mines, loss of facilities, the elimination of skilled technicans and trained miners.

The coal mining industry is presently passing through a most critical period and we wish to impress upon the Government of Canada the present critical condition of the industry and the necessity for all governments concerned to co-operate to the fullest extent possible in assisting the coal industry in the solution of its immediate and long range problems.

This interim brief will be essentially a presentation of facts from which the Commission may draw its own conclusions, because the future economy of Nova Scotia's mining industry will be dependent to a considerable extent upon the future of its coal mining operations, production from which now accounts for seventy-five per cent of the Province's mineral wealth, which is valued at about Sixty-eight Million

Dollars per annum.

There can no longer be any doubt that at present the plight of coal mining in Nova Scotia is not an enviable one. Through the dieselization of our major transport systems, the large inroads made by liquid fuel for domestic and industrial heating and the use of residual fuel oil in place of bunker coal for ships, the markets for our coal output have seriously declined in recent years. It has been pointed out that industrial expansion throughout Canada and particularly in Ontario, is proceeding at such a rapid rate, that future energy requirements are outstripping the growth of hydro power development. The production of electrical power by hydro in Ontario will have about reached its limit with the completion of the St. Lawrence project and future energy requirements will have to be met by thermal power. This condition is cited as an opening for possible new markets a few years hence for Nova Scotia coal, provided it can compete with American imported coal. A similar condition exists in our own Province with regard to hydro development and thermal power will undoubtedly be the answer to future power demands in the years ahead. Much of the power that will be developed from the St. Lawrence Seaway project will be available to the heavily populated and highly industrialized section of southern Ontario, since the hydro potential of the Province of Quebec is still sufficient for its own needs. Fuel from the Trans-Canada pipeline must also be taken into account. Such a picture nullifies the possible coal market for thermal power as mentioned previously.

Atomic power must also be considered, although it may not enter

into the picture competitively for some years. Some thought must be given, therefore, to its possibilities from a long range viewpoint.

The several years of research carried out at McGill University to determine the possibility of manufacturing a coal fired gas turbine power unit have not yet reached a successful conclusion. Should such a power plant prove feasible in the near future, it would undoubtedly give a tremendous boost to our coal market, but in the meantime, other markets for our coal must be found to maintain our coal operations on a profitable basis.

In the final analyses the choice of power as far as the consumer is concerned is one of cost and dependability. The consumer is unconcerned as to how his power is developed, provided it is low cost. If coal can be produced cheaply enough, to supply thermal power on a competitive cost basis with other fuels and hydro, it will develop its own markets. If it cannot be produced cheaply enough, then the future outlook for our coal mines is not very bright.

Vigorous attempts are being made by the Coal Mine Operators through mechanization and other improvements to reduce mining costs and improve the quality of the coal in order to meet the stiff competition.

Continued Federal subsidies on coal shipments from the Province are essential to keep the industry in a healthy state during its struggle to regain lost markets and reduce its mining costs.

THERMAL POWER

The demand for electrical energy in Eastern Canada is increasing at unprecedented rates and it appears that in certain areas there is a very definite need for thermal plants to carry base loads.

To speed up our industrial development and to increase the market for Nova Scotia Coal, we recommend that encouragement be given

to power producing companies and power commissions to use underground mined coal for new steam raising facilities by such inducements as may be found practical, such as accelerated depreciation, remission of taxes or other financial assistance for a limited period, or special subventions on Nova Scotia coal.

NATURAL GAS

In recent years natural gas has become available within the boundaries of Canada. This is to be regarded as being to the advantage of Canada provided that no short term aspects of its distribution be allowed to interfere with or to impair the reserves of other available sources of energy.

From this viewpoint the coal industry is particularly concerned, for pipelines are now being laid to supply a great part of Canada with gas and it is believed that these pipelines will be completed before the markets which can best be serviced by gas have been developed. In such event it is not to be expected that, in an effort to keep these gas lines at capacity transmission, gas producers, gas line operators and gas distributors may for a limited period sell gas, in areas now serviced by Canadian mined coal, at unreasonably low prices. In that case coal mines will be closed.

In Nova Scotia such action has no aspect of being temporary. Here, the coal fields are sub-marine and once a sub-marine mine is closed it becomes abandoned forever. In addition to the displacement of skilled and unskilled personnel in the Industry, Transport and Distribution agencies it will result in the loss of natural resources to both the Province and the nation as a whole.

The Nova Scotia coal industry believes that it is essential to avoid such loss of natural resources, and we wish to impress upon your Commission the necessity of some form of assistance to presently operating sub-marine mines so as to maintain coal in a competitive position with natural gas during the period while the natural gas market is being developed in areas now served by coal mined from such mines.

THE ST. LAWRENCE SEAWAY

The construction of the St. Lawrence Seaway is a major undertaking designed to further the welfare of the nation.

There is, however, the grave probability that, unless proper precautions are taken, the opening-up of this great waterway may adversely affect the Nova Scotia Coal Industry, because the production of coal in Nova Scotia is an essential in provincial economy.

If that probability is allowed to materialize it would seem most unfair for the coal-producing companies, and Nova Scotia in bearing their just share of the tremendous cost of the Seaway in common with the other provinces, to have contributed to their own detriment. That Nova Scotia being one of the provinces contributing to the good of the whole should suffer thereby is a most illogical proposition.

We therefore seek the immediate collaboration of your Commission in assessing the effect which the St. Lawrence Seaway will have on the Nova Scotia Coal Industry and urge that you take the necessary appropriate action to safeguard the coal mining industry and to ensure that Nova Scotia

in which coal-production is an essential to provincial economy be not adversely affected by the opening-up of the St. Lawrence Seaway.

RESIDUAL OILS

From the long term point of view the production and use of Nova Scotia mined coal is of utmost importance to the nation. In the recent past the health of the coal industry was impaired by imports of foreign coals, but this has been minimized through assistance provided by the Federal Government by way of freight subvention.

Further and in spite of everything the Coal Industry has been doing and is able to do, large markets have been lost to that Industry because of the increasing use of imported residual oils and residual oils made from imported crudes.

The Nova Scotia Coal Industry believes that at this time similar assistance through freight subvention should be afforded to the industry to permit it to compete with such imported oils at least in markets over which public bodies have some control.

We, therefore, wish to impress upon your Commission the necessity of authorizing payments of freight subvention on Nova Scotia mined coal, where practical, so as to make that coal competitive with imported crudes, where such oils could be used to displace coal for the production of energy by Public Utility Plants.

CONVERSIONS TO COMPETING FUELS

On March 18th, 1955, the Government of Canada directed:

(1) that, before the fuel burning equipment in any government building or building under government control which consumed 500 tons of coal

per annum or more was changed from coal to other fuel, the Department concerned would consult with the Dominion Coal Board or the Interdepartmental Fuel Committee about economies expected and other relevant factors, and,

(2) that, before any decision was made with regard to the type of fuel to be used in any government building or building under government control of a size which would require 50 tons of coal or more per annum, the Department concerned would consult with the Dominion Coal Board or the Interdepartmental Fuel Committee on the costs of various fuels and other relevant factors.

Despite the above enumerated policies, conversions to competing fuels continue at an accelerating rate and it is respectfully suggested that such conversions are being made without due regard to future considerations of price and supply and to the disastrous repercussions on the coal industry and on the Canadian economy as a whole.

We, therefore, recommend that the directive above quoted be revised and strengthened by the Government of Canada to the end that the continued use of coal be encouraged by the proper consideration of the aforementioned factors and that all conversions now pending be re-examined in the light of this recommended revision of policy.

NATIONAL ENERGY BOARD

Reference to the authority that might be conferred on a National Energy Board. It is our view that absorption of the functions of the Dominion Coal Board into a larger organization with responsibilities

in the whole energy field would lessen the effectiveness of its work on coal as this industry has problems peculiar to itself. It is our firm conviction that the Dominion Coal Board should be continued as a separate entity charged with its present particular responsibilities with respect to the coal industry.

In summarizing it may be said, that the coal mining industry is waging a strong battle for survival in a stiffly competitive fuel market and that the success of its efforts will depend upon its ability to hold its local and Quebec markets and to obtain new markets to maintain the minimum annual production which is necessary for a profitable operation.

The Province of Nova Scotia possesses large coal resources which are presently undeveloped, most of which must be won from submarine areas and which form a potential for future mining operations.

The foregoing is presented to the Royal Commission on Energy as an interim Brief on behalf of the Province of Nova Scotia.

E. A. Manson
Minister of Mines

Halifax, N. S.
April 10, 1958

Mr Borden

INTERIM BRIEF

submitted by

THE DEPARTMENT OF MINES

to

THE ROYAL COMMISSION ON ENERGY

HALIFAX, N.S.
15 April 1958

Dear Mr. Parkinson:

Your letter of March 11th to Mr. J.P. Messervey, Deputy Minister of Mines, states that you expect to hear evidence re the terms of reference of the Commission some time in the Fall. I am also given to understand that you are likely to present an interim report previous to your visit to Nova Scotia. As the terms of reference of the Commission are very broad and pertain to all matters of energy in the national interest, we here in Nova Scotia feel that any interim report to the Government that does not take into full consideration coal and its importance as a source of energy in the national interest would not come under the broad terms of reference under which your Commission operates.

Because of the fact that you are filing an interim report I am attaching herewith a written submission from the Province which, as the title implies, is only an interim brief and is presented in this form not because we desire such to be our final submission but because we, the Department of Mines of the Province of Nova Scotia, wish to place before this Commission some of the aspects of natural gas, residual oils and conversion to competing fuels as they affect the economy of Canada as a whole so that in the presentation of any interim report by the Commission it will take into consideration the above mentioned factors which are mentioned in our brief.

I wish to emphasize the fact that this interim brief which we are now presenting is purely an emergency measure on our part and I would not want the Commission to feel that it is our final submission on this very important aspect of our national economy.

Yours very truly,

(signed) E.A. Manson

While Canada is fortunate in having within its own boundaries sources of energy, such as coal, oil, natural gas, water and uranium, the long range conception of national progress definitely requires a vital and progressive coal industry. It is the considered opinion of experts in the energy field that the large scale use of coal will be essential for the continued growth and economic development of Canada. This cannot be achieved if the markets for coal continue to decline with resultant closure of mines, loss of facilities, the elimination of skilled technicians and trained miners.

The coal mining industry is presently passing through a most critical period and we wish to impress upon the Government of Canada the present critical condition of the industry and the necessity for all governments concerned to co-operate to the fullest extent possible in assisting the coal industry in the solution of its immediate and long range problems.

This interim brief will be essentially a presentation of facts from which the Commission may draw its own conclusions, because the future economy of Nova Scotia's mining industry will be dependent to a considerable extent upon the future of its coal mining operations, production from which now accounts for seventy-five per cent of the Province's mineral wealth, which is valued at about Sixty-eight Million Dollars per annum.

There can no longer be any doubt that at present the plight of coal mining in Nova Scotia is not an enviable one. Through the dieselization of our major transport systems, the large inroads made by liquid fuel for domestic and industrial heating and the use of residual

fuel oil in place of bunker coal for ships, the markets for our coal output have seriously declined in recent years. It has been pointed out that industrial expansion throughout Canada and particularly in Ontario, is proceeding at such a rapid rate, that future energy requirements are outstripping the growth of hydro power development. The production of electrical power by hydro in Ontario will have about reached its limit with the completion of the St. Lawrence project and future energy requirements will have to be met by thermal power. This condition is cited as an opening for possible new markets a few years hence for Nova Scotia coal, provided it can compete with American imported coal. A similar condition exists in our own Province with regard to hydro development and thermal power will undoubtedly be the answer to future power demands in the years ahead. Much of the power that will be developed from the St. Lawrence Seaway project will be available to the heavily populated and highly industrialized section of southern Ontario, since the hydro potential of the Province of Quebec is still sufficient for its own needs. Fuel from the Trans-Canada pipeline must also be taken into account. Such a picture nullifies the possible coal market for thermal power as mentioned previously.

Atomic power must also be considered, although it may not enter into the picture competitively for some years. Some thought must be given, therefore, to its possibilities from a long range viewpoint.

The several years of research carried out at McGill University to determine the possibility of manufacturing a coal fired gas turbine power unit have not yet reached a successful conclusion. Should such a

power plant prove feasible in the near future, it would undoubtedly give a tremendous boost to our coal market, but in the meantime, other markets for our coal must be found to maintain our coal operations on a profitable basis.

In the final analyses the choice of power as far as the consumer is concerned is one of cost and dependability. The consumer is unconcerned as to how his power is developed, provided it is low cost. If coal can be produced cheaply enough, to supply thermal power on a competitive cost basis with other fuels and hydro, it will develop its own markets. If it cannot be produced cheaply enough, then the future outlook for our coal mines is not very bright.

Vigorous attempts are being made by the Coal Mine Operators through mechanization and other improvements to reduce mining costs and improve the quality of the coal in order to meet the stiff competition.

Continued Federal subsidies on coal shipments from the Province are essential to keep the industry in a healthy state during its struggle to regain lost markets and reduce its mining costs.

THERMAL POWER

The demand for electrical energy in Eastern Canada is increasing at unprecedented rates and it appears that in certain areas there is a very definite need for thermal plants to carry base loads.

To speed up our industrial development and to increase the market for Nova Scotia Coal, we recommend that encouragement be given to power producing companies and power commissions to use underground mined coal for new steam raising facilities by such inducements as may

be found practical, such as accelerated depreciation, remission of taxes or other financial assistance for a limited period, or special subventions on Nova Scotia coal.

NATURAL GAS

In recent years natural gas has become available within the boundaries of Canada. This is to be regarded as being to the advantage of Canada provided that no short term aspects of its distribution be allowed to interfere with or to impair the reserves of other available sources of energy.

From this viewpoint the coal industry is particularly concerned, for pipelines are now being laid to supply a great part of Canada with gas and it is believed that these pipelines will be completed before the markets which can best be serviced by gas have been developed. In such event it is not to be expected that, in an effort to keep these gas lines at capacity transmission, gas producers, gas line operators and gas distributors may for a limited period sell gas, in areas now serviced by Canadian mined coal, at unreasonably low prices. In that case coal mines will be closed.

In Nova Scotia such action has no aspect of being temporary. Here, the coal fields are sub-marine and once a sub-marine mine is closed it becomes abandoned forever. In addition to the displacement of skilled and unskilled personnel in the Industry, Transport and Distribution agencies it will result in the loss of natural resources to both the Province and the nation as a whole.

The Nova Scotia coal industry believes that it is essential

to avoid such loss of natural resources, and we wish to impress upon your Commission the necessity of some form of assistance to presently operating sub-marine mines so as to maintain coal in a competitive position with natural gas during the period while the natural gas market is being developed in areas now served by coal mined from such mines.

THE ST. LAWRENCE SEAWAY

The construction of the St. Lawrence Seaway is a major undertaking designed to further the welfare of the nation.

There is, however, the grave probability that, unless proper precautions are taken, the opening-up of this great waterway may adversely affect the Nova Scotia Coal Industry, because the production of coal in Nova Scotia is an essential in provincial economy.

If that probability is allowed to materialize it would seem most unfair for the coal-producing companies, and Nova Scotia in bearing their just share of the tremendous cost of the Seaway in common with the other provinces, to have contributed to their own detriment. That Nova Scotia being one of the provinces contributing to the good of the whole should suffer thereby is a most illogical proposition.

We therefore seek the immediate collaboration of your Commission in assessing the effect which the St. Lawrence Seaway will have on the Nova Scotia Coal Industry and urge that you take the necessary appropriate action to safeguard the coal mining industry and to ensure that Nova Scotia in which coal-production is an essential to provincial economy be not adversely affected by the opening-up of the St. Lawrence Seaway.

RESIDUAL OILS

From the long term point of view the production and use of Nova Scotia mined coal is of utmost importance to the nation. In the recent past the health of the coal industry was impaired by imports of foreign coals, but this has been minimized through assistance provided by the Federal Government by way of freight subvention.

Further and in spite of everything the Coal Industry has been doing and is able to do, large markets have been lost to that Industry because of the increasing use of imported residual oils and residual oils made from imported crudes.

The Nova Scotia Coal Industry believes that at this time similar assistance through freight subvention should be afforded to the industry to permit it to compete with such imported oils at least in markets over which public bodies have some control.

We, therefore, wish to impress upon your Commission the necessity of authorizing payments of freight subvention on Nova Scotia mined coal, where practical, so as to make that coal competitive with imported crudes, where such oils could be used to displace coal for the production of energy by Public Utility Plants.

CONVERSIONS TO COMPETING FUELS

On March 18th, 1955, the Government of Canada directed:

(1) that, before the fuel burning equipment in any government building or building under government control which consumed 500 tons of coal per annum or more was changed from coal to other fuel, the Department concerned would consult with the Dominion Coal Board or the Inter-

departmental Fuel Committee about economies expected and other relevant factors, and,

(2) that, before any decision was made with regard to the type of fuel to be used in any government building or building under government control of a size which would require 50 tons of coal or more per annum, the Department concerned would consult with the Dominion Coal Board or the Interdepartmental Fuel Committee on the costs of various fuels and other relevant factors.

Despite the above enumerated policies, conversions to competing fuels continue at an accelerating rate and it is respectfully suggested that such conversions are being made without due regard to future considerations of price and supply and to the disastrous repercussions on the coal industry and on the Canadian economy as a whole.

We, therefore, recommend that the directive above quoted be revised and strengthened by the Government of Canada to the end that the continued use of coal be encouraged by the proper consideration of the aforementioned factors and that all conversions now pending be re-examined in the light of this recommended revision of policy.

NATIONAL ENERGY BOARD

Reference to the authority that might be conferred on a National Energy Board raises a question concerning the future of the Dominion Coal Board. It is our view that absorption of the functions of the Dominion Coal Board into a larger organization with responsibilities in the whole energy field would lessen the effectiveness of its work on coal as this industry has problems peculiar to itself. It is our

firm conviction that the Dominion Coal Board should be continued as a separate entity charged with its present particular responsibilities with respect to the coal industry.

In summarizing it may be said, that the coal mining industry is waging a strong battle for survival in a stiffly competitive fuel market and that the success of its efforts will depend upon its ability to hold its local and Quebec markets and to obtain new markets to maintain the minimum annual production which is necessary for a profitable operation.

The Province of Nova Scotia possesses large coal resources which are presently undeveloped, most of which must be won from submarine areas and which form a potential for future mining operations.

The foregoing is presented to the Royal Commission on Energy as an interim Brief on behalf of the Province of Nova Scotia.

E.A. Manson
Minister of Mines

Halifax, N.S.
April 10, 1958

Appendix

THE FOLLOWING MATERIAL IS DRAWN CHIEFLY FROM THE ROYAL COMMISSION STUDY ON CANADIAN ENERGY PROSPECTS AND IS USED IN SUPPORT OF THE 'INTERIM BRIEF' PREVIOUSLY PRESENTED BY THE DEPARTMENT OF MINES

The demand for energy in Canada has been growing at a rate somewhat in excess of the world average, and future requirements are bound to be even greater than those of the past. Canada's raw energy needs will probably tend to approach (or even exceed), rather than fall markedly behind the rate of growth of the Gross Natural Product. What part coal is to play in supplying these increased energy requirements is an important question.

It must be admitted that the present plight of coal mining in Nova Scotia is not an enviable one. Coal as a supply of energy is presently declining on the North American continent, while petroleum and natural gas are gaining in importance. Through the dieselization of our own major transportation systems, the large inroads made by liquid fuels for domestic and industrial heating and the use of residual fuel oil in place of bunker coal for ships, the demand for Nova Scotia coal has seriously declined in recent years. However, this is a short-term situation. Between the present and 1960 the overall sale of Nova Scotia coal is expected to continue to decline between 10% and 20%. Increased exports overseas and a greater volume of sales to the power producing utilities are expected to somewhat offset the above mentioned forces tending towards decline in the industry.

The long-term demand for coal would appear to be much more favourable. Coal may well regain some of its former importance, both

as a source of heat and as a chemical raw material.

First, it will be the coal using metallurgical industries and electric power utilities that will hold the greatest possibilities. The production of electricity by hydro in Ontario will have about reached its limit with the completion of the St. Lawrence Seaway project, and future requirements will have to be met by thermal power. This condition has been noted in the "Interim Brief" as an opening for possible new markets a few years hence for Nova Scotia coal, provided it can compete with American imported coal. A similar condition exists in our own Province with regard to hydro development, and thermal power will undoubtedly be the answer to future power demands in the years ahead. However, increased competition from United States coal because of the Seaway, and competition from fuel from the Trans-Canada pipeline must also be taken into consideration.

Later, coal as a source of synthetic liquids and gases may regain a number of industrial, commercial and residential applications which it once supplied, though less conventionally, in solid forms. On this continent there are only 15 years of proven oil production in sight, and 25 years of proven natural gas production in sight. Some future finds of fossil fuels will doubtless be made, but the supply of these fuels is limited, and some substitute form of fuel will be necessary. Quoting directly from the study on Canadian Energy Prospects: "At the present time, well over one-half of all the fuel oil being consumed on this continent is being burned up by heavy industry, boilers, and in the production of electrical power - uses which, assuming some further increase in price, could equally be served through the use of coal or through the substitution of liquid products derived from oil shale,

bitumen, or the destructive distillation of coal itself". Thus, substitution will not only be necessary, but will also be feasible. Moreover, coal can be the source of much of this substitution.

Along with demand, the future price of coal and the various other sources of energy is of greatest significance in determining the position each source of energy will have in meeting the increased need for energy. The real price* of coal in Canada will show a modest decline over the next 20 to 30 years. On the other hand, it is forecast that the price of oil (in the United States) will rise relative to other commodities in the 1960's, but will not be more than 20% above the present leval in 1980. Moreover, it is forecast that the price of natural gas in Canada may double over the next 25 years and the price of electricity will increase by 10% to 20% over the same period. This means that the price of coal, relative to other sources of energy, is expected to improve in the years to come. Coal will then be in a better competitive position to increase its share as a source of energy.

* Current price at the mine divided by the wholesale price for all products.

The Outlook on Energy Sources (Paley Report, U. S.)states: "Sometime after 1975, whenever the cost relationship shifts and domestic oil and gas production become either too high in cost or too low in volume - coal is expected gradually to take over the heavier part of the energy burden in the United States". Canada can be expected to follow somewhat the same pattern.

The following table has been taken from the study on Canadian Energy Prospects.

Estimated Coal Supplies in Canada
(in millions of short tons)

	1955	1965	1980
Production	14.6	10.8	16.0 - 24.5
Imports	19.7	20.0	41.0 - 62.0
Exports	0.6	0.5	2.0 - 8.0
Supply	33.7	30.3	55.0 - 78.5

Whereas home production is expected to increase after 1965, imports are expected to increase at an even faster rate.

The outlook for the use of coal in Canada generally is encouraging. However, the outlook for the industry in Nova Scotia is far from certain. Further mechanization of the face and improvements in loading and in underground transportation equipment have helped to minimize certain costs and to offset others. Yet even greater progress will have to be made if the Eastern Canadian mines are to compete with United States mines and other sources of energy. The physical conditions have made it well nigh impossible for the companies concerned to utilize much of the equipment which is available elsewhere for mechanized mining. But there must be increased efficiency by increased mechanization. All this requires capital. Planning on a large scale and for many years ahead presumes both a high level of investment and comparatively low rates of interest.

The view of the Nova Scotia government, as stated in the "Interim Brief",

must remain unchanged. In the short-run the prospect for the use of coal as a source of energy is not particularly bright, but in the long-run the use of coal as a source of energy will definitely increase. However, closing the Nova Scotia mines has no aspect of being temporary. Here, the coal mines are sub-marine and once a sub-marine mine is closed it becomes abondoned forever. In addition to the displacement of skilled and unskilled personnel in the Industry, as well as in the transportation and distribution agencies, it will result in the loss of natural resources to back the Province and the nation as a whole. The Nova Scotia coal industry believes that it is essential to avoid such loss of natural resources and it wishes to impress upon the Commission the necessity of some form of assistance to presently operating sub-marine mines so as to maintain coal in a competitive position with other sources of energy during the unfavourable short-term situation.

July 17, 1958.

Mr Borden Exhibit M-22-2

July, 1958.

TRANS-CANADA PIPE LINES LIMITED

Proposed Sale of Natural Gas at Niagara International Connection to Tennessee Gas Transmission Company

Character of Service Proposed

The agreements between Trans-Canada Pipe Lines Limited (Trans-Canada) and Tennessee Gas Transmission Company (Tennessee) concerning the proposed sale of natural gas by Trans-Canada to Tennessee at the Niagara International interconnection between the two systems provides for a "Seller's Option" type of service, completely under the control of Trans-Canada at all times as to either daily or annual volumes. The service is fully interruptible and provides no guaranteed volume which Trans-Canada must supply to Tennessee in any year. On the other hand, the agreement constitutes a "put", in that it provides that Tennessee will take any gas available from Trans-Canada up to 200,000 Mcf per day during any day in which Trans-Canada is able to make any deliveries.

Effect of Sale on Trans-Canada

Some of the more important effects of the proposed Niagara sale are outlined below:

1. The price to be obtained for gas sold to Tennessee is 37¢ per Mcf measured at 15.025 p.s.i.g. (36.274¢ per Mcf at 14.73 p.s.i.g., Trans-Canada's normal sales base). This will be a premium sale from the standpoint of Trans-Canada, with the price received well in excess of the cost of rendering service of this type in Trans-Canada's Central Rate Zone.

2. The sale is, in effect, "insurance" that Trans-Canada will be able to keep its pipe line sales volumes in the East at a maximum at all times. On the odd day (such as over week-ends and holidays, during periods when there are strikes in industries curtailing industrial volumes taken by the distribution companies or in the instance where certain of the loads are slow in development) this "put" will enable Trans-Canada to have an alternative place to sell its gas and thus keep its sales at a maximum at all times. In addition, the working relationship with Tennessee will make more feasible a mutual assistance arrangement, whereby in time of emergencies either line could be of assistance to the other in the maintenance of continuous service.

3. By keeping the through-put of the line as constant as possible, regardless of variations in the day-to-day sales to the distribution company customers of Trans-Canada, the sale at Niagara will improve the buying position of the company with natural gas producers in Alberta. The constant day-to-day "takes" which such sale will help insure will reduce the day-to-day variations which producers must experience and will allow the company to make contracts with tighter leeway provisions more acceptable to the producers.

4. To the extent that gas is available for sale to Tennessee at Niagara, such sales will improve the earnings and hence the economic picture of Trans-Canada. If we consider such sales on the basis of 1 billion cubic feet at 14.73 p.s.i.g. (the Trans-Canada normal sales base) the company will receive revenue from Tennessee for each such billion cubic feet of $362,740. The cost - including additional gas for the sale, plus gas for compressor fuel to move the additional volume East, plus transportation charges paid to Alberta Gas Trunk Line, plus Crown Section rental until the Crown Section is finally purchased - will total under $260,000 in all of the first five years of operation. The net revenue from the sale of each billion cubic feet will thus be in excess of $100,000 in each of these years, or at a rate slightly in excess of 10¢ per Mcf on a unit basis.

An increase of 1% in Trans-Canada's annual load factor in the year 1962-63 as a result of this ability to make sales at Niagara would mean additional net income to Trans-Canada on the order of $275,000, based on Canadian sales alone, or on the order of $350,000 including the sale at Emerson.

TRANS-CANADA PIPE LINES LIMITED

GAS STORAGE

For the assistance of this Royal Commission on Energy, Trans-Canada has made an investigation concerning the economic availability of gas storage in Eastern Canada, and presents its views as to the effects of such gas storage on the operations of its system.

In its investigation, Trans-Canada has studied the data submitted to this Royal Commission by the Union Gas Company of Canada, Limited, and The Consumers' Gas Company. In addition, it has made use of all of the data made available to it by the Geological Survey of Canada, Union Gas Company of Canada, Limited, and the Ontario Fuel Board.

Of the presently known fields in Eastern Canada, certain fields in Southwestern Ontario appear to us to be suitable for gas storage. A tabulation entitled - "Fields Classified According to their General Availability for Gas Storage" is attached hereto, and lists these fields and their estimated gas storage capacities. Union and Consumers' are presently storing gas in certain of these fields and have plans to expand to other fields as their markets and their need for storage continues to grow.

The use of gas storage by a distributing or transmission company is dependent upon the cost of such storage, and this in turn to a large extent is a function of the distance from storage field to market area. From an evaluation of this distance factor as related to the economic use of available gas storage in Southwestern Ontario, we concluded that the usefulness of these available storage fields will be limited mainly to serving the distributing areas of Union Gas Company of Canada, Limited, and The Consumers' Gas Company (Central Zone) in Ontario. It is interesting to note in this regard that most of the fields presently being used for gas storage in the U. S. A. are located at a distance of less than 200 miles from the market they serve.

Trans-Canada does not own or control any gas storage facilities in Southwestern Ontario; however, it benefits greatly from this use of storage by Union and Consumers'. To illustrate the benefits which Trans-Canada enjoys indirectly from the use of this storage, we attach hereto a tabulation entitled - "Estimated Peak Day Use of Storage by Union and Consumers' and its Effect on the Load Factor of Trans-Canada Pipe Lines".

This table shows in columns 13 and 14, respectively, the estimated load factor on the Trans-Canada system and an estimate of the load factor on this system which would result if storage facilities were not available to Union and Consumers'. This comparison shows, by years, that Trans-Canada's over-all load factor would be lowered from 90% plus to approximately 65% if it were not for these storage facilities. From this comparison we conclude that Trans-Canada's cost of transmission would be increased by some 40% if storage facilities were not available to Union and Consumers'.

In evaluating the effect of storage on Trans-Canada's load factor as shown in the abovementioned table, it was necessary to relate the estimated amount of storage that may be required by Union and Consumers' to the amount of available storage in Southwestern Ontario.

An estimate by years of the amount of storage that will be required by Union and Consumers' is attached hereto and entitled - "Estimate of Storage Use Required by Union Gas and Consumers' Gas (Central Zone)". This tabulation is based on the assumption that Union and Consumers' will continue to purchase gas on a load factor basis consistent with the present contracts they have with Trans-Canada, and shows the estimated peak day and winter withdrawals required as a result.

By relating the needs of Union and Consumers' for storage with the availability of storage in Southwestern Ontario, we conclude that based upon present day economics storage is being developed to the extent that it can be effectively utilized, and that sufficient storage can be developed as needed to meet the future needs of Union and Consumers' over the projected 30-year period.

We further conclude that the high load factor operation afforded the distributing companies and Trans-Canada Pipe Lines by this usage of storage is of great benefit to consumers and producers of gas alike.

July, 1958.

TRANS-CANADA PIPE LINES LIMITED

FIELDS CLASSIFIED ACCORDING TO THEIR GENERAL AVAILABILITY FOR GAS STORAGE

	Estimated Working Storage - BCF
1. Fields designated for operation by Ontario Natural Gas Storage and Pipelines Limited (*)	
(a) Dawn	7.9
(b) Payne	12.3
(c) Waubuno	6.1
Total:	26.3
2. Other fields considered by Union to be good potential storage fields (*)	
(a) Dawn	7.2
(b) Kimball-Colinville	24.3
(c) Bickford	11.4
Total:	42.9
3. Presently producing oil fields which could be used for storage	
(a) Corunna	2.0
(b) Seckerton	4.0
(c) Sombra	2.3
(d) Becher	2.0
Total:	10.3
4. Other fields considered to be good potential storage fields	
(a) Enniskillen	1.0
(b) Strangway	1.5
(c) Dover	4.0
Total:	6.5
GRAND TOTAL:	86.0

* In agreement with submission of Union Gas Company of Canada, Limited, dated July 1958.

July, 1958.

TRANS-CANADA PIPE LINES LIMITED

Estimated Peak Day Use of Storage by Union and Consumers' (Central Zone)
and its Effect on the Load Factor of Trans-Canada Pipe Lines - Excluding Emerson

(All Volumes in Millions of Cubic Feet at 14.73 p.s.i.a.)

Year	Peak Day Requirements			Peak Day Supply from Sources Other Than Storage					Peak Day Supply From Storage	T.C.P.L. Total Capacity Req't		T.C.P.L. Daily Average	T.C.P.L. Total Load Factor - %	
				Local		Trans-Canada				With Storage	Without Storage		With Storage	Without Storage
				(a)	(b)	(c)	(d)							
	Union (1)	Consumers' (2)	Total (3)	Union (4)	Consumers' (5)	Union (6)	Consumers' (7)	Total (8)	(9)	(10)	(11)	(12)	(13)	(14)
1959	185.9	176.3	362.2	65.0	34.3	Nil	90.0	189.3	172.9	267.6	440.5	271.9	101.6	61.7
1960	214.9	217.1	432.0	62.0	28.1	33.8	112.0	235.9	196.1	437.4	633.5	426.5	97.5	67.3
1961	246.1	255.8	501.9	62.0	20.8	40.7	133.0	256.5	245.4	539.1	784.5	529.6	98.2	67.5
1962	279.8	300.6	580.4	58.0	22.6	46.2	153.0	279.8	300.6	670.4	971.0	640.2	95.5	65.9
1963	311.7	345.3	657.0	54.0	48.3	52.7	172.0	327.0	330.0	758.9	1088.9	696.8	91.8	64.0
1968	447.5	524.8	972.3	17.0	48.3	118.9	287.1	471.3	501.0	1194.3	1695.3	1123.3	94.1	66.3
1973	561.4	648.7	1210.1	15.0	48.3	141.1	356.0	560.4	649.7	1734.5	2384.2	1604.4	92.5	67.3
1978	671.0	820.7	1491.7	15.0	48.3	176.7	451.6	691.6	800.1	2261.2	3061.3	2128.6	94.1	69.5
1983	791.2	999.7	1790.9	15.0	48.3	207.6	551.2	822.1	968.8	2829.1	3797.9	2682.5	94.8	69.2
1988	934.8	1173.3	2108.1	15.0	48.3	247.3	647.7	958.3	1149.8	3496.6	4646.4	3317.2	94.9	71.4

Note: Data relating to Union and Consumers' taken from their respective submissions to the Royal Commission on Energy.

(a) Calculated on the basis of a 65% load factor.

(b) Includes estimate for propane-air peak shaving plant.

(c) Average deliveries during winter period assumed consistent with terms of present contract.

(d) 90% load factor assumed for purchases after 1963.

July, 1958.

TRANS-CANADA PIPE LINES LIMITED

Estimate of Storage Use Required by Union Gas and Consumers' Gas (Central Zone)

(All Volumes in Millions of Cubic Feet at 14.73 p.s.i.a.)

Year	PEAK DAY			WINTER WITHDRAWALS (A)		
	Union (1)	Consumers' (2)	Total (3)	Union (4)	Consumers' (5)	Total (6)
1959	120.9	52.0	172.9	6,062	4,600	10,662
1960	152.9	77.0	229.9	5,836	5,600	11,436
1961	184.1	102.0	286.1	7,348	6,600	13,948
1962	221.8	125.0	346.8	9,827	7,500	17,327
1963	257.7	125.0	382.7	11,873	7,500	19,373
1968	430.5	189.4	619.9	17,717	11,364	29,081
1973	546.4	244.4	790.8	23,630	14,664	38,294
1978	656.0	320.8	976.8	26,972	19,248	46,220
1983	776.2	400.2	1176.4	31,879	24,012	55,891
1988	919.8	477.3	1397.1	47,121	28,638	75,759

Note: This tabulation is calculated from data submitted to Royal Commission on Energy by Union and Consumers'.

(A) Period beginning November 1 and extending to March 31 of the year shown.

July, 1958.

Mr. Borden

10 + 2 copies

9-2-4

TRANS-CANADA PIPE LINES LIMITED
92 KING STREET EAST
TORONTO 1, ONTARIO

N. JOHN MCNEILL, Q.C.
VICE-PRESIDENT
GENERAL COUNSEL & SECRETARY

August 12, 1958.

Joseph F. Parkinson, Esq.,
Secretary,
Royal Commission on Energy,
Daly Building, P. O. Box 1173,
Ottawa, Ontario.

Dear Mr. Parkinson,

At the Montreal hearing a Memorandum entitled, "Probable Impact of Trans-Canada's Gas Sales on the Markets for Oil and Coal in Ontario and Quebec for the Year 1962 - 1963" was filed as Exhibit M-22-4. It has now been discovered that due to arithmetical errors, pages three and five of the Memorandum contained some incorrect figures. I have now had that Memorandum re-run making the necessary corrections and twenty-five copies thereof are enclosed herewith.

I would appreciate it very much if distribution of these new copies could be made to those members of the Commission and the Commission staff concerned with the Memorandum, with an appropriate note pointing out the fact of the errors contained in the original file.

I have found that a question was asked by the Commission concerning interruptible sales but through inadvertance was not answered by ourselves. The question pertained to the actual percentage of the estimated interruptible sales that would be made in eastern Canada, that would, in fact, be made as interruptible sales by Trans-Canada to its distributor company customers. I would advise that of the total estimated interruptible sales estimated to be made in Trans-Canada's market area during the year 1958 - 1959, 29.9% would be made as interruptible sales by Trans-Canada; for the year 1962 - 1963 17.4% would be made by Trans-Canada. I would appreciate if these figures could be passed to the appropriate people.

For their information, I am sending a copy of this letter to both, Mr. A.S. Pattillo and Mr. M. Patterson.

Yours very truly,

NJM/bd
Encls.

Mr Borden

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-57522

M-22-4

PROBABLE IMPACT OF TRANS-CANADA'S GAS SALES ON THE MARKETS FOR OIL AND COAL IN ONTARIO AND QUEBEC FOR THE YEAR 1962 - 1963

This presentation aims to show how the sales of Trans-Canada's gas in Ontario and Quebec may reasonably be expected to affect the sales of oil and coal on the assumption that Trans-Canada's pipe line had never been built.

The natural gas to be sold by Trans-Canada to distributing companies in Ontario and Quebec for resale to customers in those provinces, as forecast for the year 1962-63, will amount to 227 billion cubic feet and is to be distributed approximately as shown in the table below. The quantities are based on submissions made to the Commission in Calgary last February.

(Billions of Cubic Feet)

Type of Use	Ontario	Quebec	Total
Residential and Commercial	71.0	25.4	96.4
Industrial	95.8	35.0	130.8
Total	166.8	60.4	227.2

The total sales of Trans-Canada's gas will represent, according to our estimates, approximately 20 per cent of the total residential, commercial and industrial fuel requirements in the two provinces in 1962-63.

Approximately 23 billion cubic feet of the 96 billion cubic feet of gas to be sold for Residential and Commercial purposes, and approximately 11 billion cubic feet of the 131 billion cubic feet of gas to be sold for industrial purposes will replace manufactured gas and imported natural gas already being sold in 1958.

While much of the 73 billion cubic foot balance of the Trans-Canada gas to be sold for Residential and Commercial purposes will replace sales which otherwise might go to oil heat, the widespread availability of natural gas in addition to oil should induce a larger number of small property owners to replace or convert heating equipment now burning solid fuels. Also, the initial cost of installing gas heat is lower than that of installing oil burning equipment, and the combined selling efforts of the gas industry and of the oil industry should be more effective than those of just the oil industry.

The additional effect of natural gas on coal as a domestic and commercial fuel may not be great because there already is a trend away from this solid fuel to automatic heat. The Dominion Bureau of Statistics yearly sample survey shows that the number of households heated with coal in the two provinces decreased annually by about 66,000 households during the past three or four years, and there was a parallel yearly decrease of some 30,000 households that used wood as the principal heating fuel. Gas is expected to obtain a considerable share of the

future conversions in the service area that otherwise might have been obtained by oil. Gas will also capture a rapidly increasing portion of the fuel requirements of new homes being constructed in the service area.

The additional 120 billion cubic feet of gas for industrial use will be sold almost wholly to customers who otherwise would use oil and coal. As used here, the term "industrial" includes manufacturing and mining, but not transportation and electric power generation.

In accordance with the suggestion of the Chairman, in our projections we have used the current ratio of oil and coal used by industry as a basis for apportioning the effect of sales of Trans-Canada gas between the two other major fuels. In 1956, the latest year for which complete data are available, industry in Ontario used those fuels in the ratio of 4 for coal to one for oil; in Quebec, on the other hand, industrial use of the two fuels was almost evenly divided in a 1 to 1 ratio.

Of the 193 billion cubic feet of gas supplied by Trans-Canada, in 1962-63 in competition with other fuels in Ontario and Quebec 123 billion cubic feet will be directly competitive with oil for residential, commercial and industrial uses, equivalent to 21 million barrels of oil, or about 58,000 barrels daily. Based on usage in 1956, kerosene, stove oil and light fuel oils would account for 13 million barrels, or 36,000 barrels daily, and heavy fuel oil for 8 million barrels, or 22,000 barrels daily.

No attempt is made here to estimate the extent to which the division of markets between distillate fuel oil and gas might affect refining production in the Ontario or Quebec refining areas in 1963. Trends in the relative position of the oil refining in the two provinces have been the subject of considerable testimony before the Commission. However, the 13 million barrels of light oil fuels involved would be considerably less than the growth in consumption of such fuels in the two provinces from 18 million barrels in 1951 to 39 million barrels in 1956.

The 8 million barrels of heavy fuel oil that would yield to gas are below the gain in demand for such oil for industrial and heating uses from 9 million barrels in 1951 to 18 million barrels in 1956. Total usage of heavy fuel oil for all purposes in the two provinces amounted to 32 million barrels in 1956 and 35 million barrels in 1957.

It may be of significance to the Commission that Ontario refineries in 1957 refined only 42 per cent of the heavy fuel oil consumed in the province although they met 65 per cent of the domestic gasoline demand. Further, Quebec and Ontario together imported more than 2,900,000 barrels of heavy fuel oil from foreign countries in 1957. These facts are significant to the subject under consideration. First, they recall the fact that oil products prices are not favourable to production of a high yield of heavy fuel oil from Canadian crude oil, at least East of

Lake Superior, even when there is a potential market near the refineries. Secondly, they indicate that under present conditions the initial impact of any relative, or possibly temporary absolute decrease in demand for heavy fuel oil in Ontario and Quebec might be to reduce imports of heavy fuel oil. There could also be a decrease in the volume of heavy crude oil imported to refineries in the Montreal area. Whether or not any prospective "displacement" of heavy fuel oil by gas in Ontario or Quebec would, under any foreseeable circumstances, be likely to reduce the demand for Canadian crude oil to a perceptible degree is a question that could be readily determined.

The estimated sale of the balance of 70 billion cubic feet of gas will be to industry in competition with coal, equivalent to approximately 2.7 million tons of that commodity. Of that amount, some 615,000 tons would be in the Province of Quebec, where total industrial coal consumption in 1957 was more than 2,700,000 tons. The remaining 2,085,000 tons would be displaced in Ontario, where all but a very minor part of the coal must be imported from the United States.

As a further means of showing the competitive fuel situation in perspective, both historically and in the future, tables are attached which indicate that even with gas gaining rapidly, heating oil should still have room for a good rate of growth during the next five years. In this connection, it is noted that in the projections it has been assumed that all of the

gas sold for residential and commercial uses would come out of sales which might otherwise have gone to oil. Actually, a substantial portion of the sales of gas for such uses will be to new homes and establishments, with much of the balance coming from conversions of existing coal users.

In estimating total residential and commercial requirements for oil, gas and coal, we have used the same rates of population growth and per capita usage of oil, coal and gas that prevailed in recent years. In estimating growth in total industrial fuel requirements, we have considered the report to the Royal Commission on Canada's economic prospects (Canadian Energy Prospects, p.306) which suggests a long term average rate of increase of 4.3 to 4.5 per cent a year. We have used a slightly lower rate of increase for the projection to 1962-63.

QUEBEC

OIL, COAL AND GAS FOR INDUSTRIAL USE

A - Quantities

	1951	1952	1953	1954	1955	1956	1957	1963
FUEL OILS (000 Barrels)								
Kerosene, etc.	58	67	62	49	99	144		
Light Fuel	833	1,213	849	940	1,263	1,300		
Sub-Total	891	1,280	911	989	1,362	1,444	N.A.	1,400
Heavy Fuel	3,977	4,137	5,900	7,079	8,672	9,996	N.A.	9,700
TOTAL OIL	4,868	5,417	6,811	8,068	10,034	11,440	N.A.	11,100
COAL AND COKE (000 Tons)								
Industrial Deliveries	2,972	2,867	2,422	2,370	2,441	2,711	2,442	2,680
GAS (Billions cu. ft.)	1.0	1.0	1.0	1.0	1.0	1.1		35.0

B - Billions of c.f. Natural Gas Equivalent

FUEL OILS								
Kerosene, etc.	0.3	0.4	0.4	0.3	0.6	0.8		
Light Fuel	4.9	7.0	5.0	5.4	7.4	7.6		
Sub-Total	5.2	7.4	5.4	5.7	8.0	8.4	N.A.	8.2
Heavy Fuel	25.1	26.1	37.2	44.6	54.6	63.0	N.A.	61.0
TOTAL OIL	30.3	33.5	42.4	50.3	62.6	71.4	N.A.	69.2
COAL AND COKE								
Industrial Deliveries	77.3	74.5	63.0	61.6	63.5	71.8	63.5	69.5
GAS	1.0	1.0	1.0	1.0	1.0	1.1		35.0
TOTAL	108.6	109.0	106.4	112.9	127.1	144.3		173.7

QUEBEC

OIL, COAL AND GAS FOR DOMESTIC AND COMMERCIAL USE

A - Quantities

	1951	1952	1953	1954	1955	1956	1957	1963
FUEL OILS (000 Barrels)								
Kerosene, etc.	3,029	3,400	3,406	4,444	4,033	4,169		
Light Fuel	4,420	4,947	5,477	7,012	8,504	10,272		
Sub-Total	7,449	8,347	8,883	11,456	12,537	14,441	N.A.	22,000
Heavy Fuel	1,705	1,884	2,253	2,444	2,749	2,720	N.A.	3,000
TOTAL OIL	9,154	10,231	11,136	13,900	15,286	17,161	N.A.	25,000
COAL AND COKE (000 Tons)								
Retail Deliveries	1,607	1,499	1,288	1,197	1,171	1,140	983	575
GAS	3.5	3.6	3.8	3.9	3.9	4.1		25

B - Billions of c.f. Natural Gas Equivalent

FUEL OILS								
Kerosene, etc.	17.2	19.3	19.3	24.2	22.9	23.6		
Light Fuel	25.6	28.7	31.8	40.7	49.4	59.6		
Sub-Total	42.8	48.0	51.1	64.9	72.3	83.2	N.A.	128
Heavy Fuel	10.7	11.9	14.2	15.4	17.3	17.1	N.A.	22
TOTAL OIL	53.5	59.9	65.3	80.3	89.6	100.3	N.A.	150
COAL AND COKE								
Retail Deliveries	41.8	39.0	33.5	31.1	30.4	29.6	25.6	15
GAS	3.5	3.6	3.8	3.9	3.9	4.1		25
TOTAL	98.8	102.3	102.6	105.3	123.9	134.0		190

ONTARIO

OIL, COAL AND GAS FOR INDUSTRIAL USE

A - Quantities

	1951	1952	1953	1954	1955	1956	1957	1963
FUEL OILS (000 Barrels)								
Kerosene, etc.	405	50	58	56	81	567		
Light Fuel	941	1,690	978	1,746	1,746	2,403		
Sub-Total	1,346	1,740	1,036	1,802	1,827	2,970	N.A.	3,000
Heavy Fuel	5,235	4,010	5,011	6,092	7,747	8,104	N.A.	9,000
TOTAL OIL	6,581	5,750	6,047	7,894	9,574	11,074	N.A.	12,000
COAL AND COKE (000 Tons)								
Industrial Deliveries	8,811	8,922	9,970	8,917	9,973	10,775	11,056	11,000
GAS (Billion c.f.)	1.7	1.9	2.1	2.2	3.4	5.1		99.7

B - Billions of c.f. Natural Gas Equivalent

FUEL OILS								
Kerosene, etc.	2.3	0.3	0.3	0.3	0.5	3.2		
Light Fuel	5.5	9.8	5.6	10.1	10.1	14.0		
Sub-Total	7.8	10.1	5.9	10.4	10.6	17.2	N.A.	17.6
Heavy Fuel	33.0	25.3	31.6	38.4	48.8	51.1	N.A.	52.1
TOTAL OIL	40.8	35.4	37.5	48.8	59.4	68.3	N.A.	69.7
COAL AND COKE								
Industrial Deliveries	229.0	232.0	259.2	231.8	259.3	280.1	287.5	285.8
GAS	1.7	1.7	2.1	2.2	3.4	5.1		99.7
TOTAL	271.5	269.1	298.8	280.8	332.1	353.5		455.4

ONTARIO

OIL, COAL AND GAS FOR DOMESTIC AND COMMERCIAL USE

A - Quantities

	1951	1952	1953	1954	1955	1956	1957	1963
FUEL OILS (000 Barrels)								
Kerosene, etc	2,063	2,474	2,742	3,514	3,172	3,368		
Light Fuel	8,674	10,404	11,522	14,493	16,767	19,781		
Sub-Total	10,737	12,878	14,264	18,007	19,939	23,149	N.A.	35,000
Heavy Fuel	878	1,224	1,182	1,382	1,853	1,857	N.A.	3,000
TOTAL OIL	11,615	14,102	15,446	19,389	21,792	25,006	N.A.	38,000
COAL AND COKE (000 Tons)								
Retail Deliveries	5,218	4,813	4,092	4,004	3,752	3,695	3,162	1,500
GAS (Billions c.f.)	8.7	9.7	10.9	12.3	18.5	22.9		94

B - Natural Gas Equivalent in Billions c.f.

FUEL OILS								
Kerosene, etc.	11.7	14.0	15.5	19.9	18.0	19.1		
Light Fuel	50.3	60.4	66.8	84.1	97.3	115.2		
Sub-Total	62.0	74.4	82.3	104.0	115.3	134.3	N.A.	203
Heavy Fuel	5.5	7.7	7.4	8.7	11.7	11.7	N.A.	16
TOTAL OIL	67.5	82.1	89.7	112.7	127.0	146.0	N.A.	219
COAL AND COKE								
Retail Deliveries	135.7	125.1	106.4	105.1	97.6	96.1	82.2	40
GAS	8.7	9.7	10.9	12.3	18.5	22.9		94
TOTAL	211.9	216.9	197.0	230.1	243.1	265.0		353

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PROBABLE IMPACT OF TRANS-CANADA'S GAS SALES ON THE MARKETS FOR OIL AND COAL IN ONTARIO AND QUEBEC FOR THE YEAR 1962 - 1963

This presentation aims to show how the sales of Trans-Canada's gas in Ontario and Quebec may reasonably be expected to affect the sales of oil and coal on the assumption that Trans-Canada's pipe line had never been built.

The natural gas to be sold by Trans-Canada to distributing companies in Ontario and Quebec for resale to customers in those provinces, as forecast for the year 1962-63, will amount to 227 billion cubic feet and is to be distributed approximately as shown in the table below. The quantities are based on submissions made to the Commission in Calgary last February.

(Billions of Cubic Feet)

Type of Use	Ontario	Quebec	Total
Residential and Commercial	71.0	25.4	96.4
Industrial	95.8	35.0	130.8
Total	166.8	60.4	227.2

The total sales of Trans-Canada's gas will represent, according to our estimates, approximately 20 per cent of the total residential, commercial and industrial fuel requirements in the two provinces in 1962-63.

Approximately 23 billion cubic feet of the 96 billion cubic feet of gas to be sold for Residential and Commercial purposes, and approximately 11 billion cubic feet of the 131 billion cubic feet of gas to be sold for industrial purposes will replace manufactured gas and imported natural gas already being sold in 1958.

While much of the 73 billion cubic foot balance of the Trans-Canada gas to be sold for Residential and Commercial purposes will replace sales which otherwise might go to oil heat, the widespread availability of natural gas in addition to oil should induce a larger number of small property owners to replace or convert heating equipment now burning solid fuels. Also, the initial cost of installing gas heat is lower than that of installing oil burning equipment, and the combined selling efforts of the gas industry and of the oil industry should be more effective than those of just the oil industry.

The additional effect of natural gas on coal as a domestic and commercial fuel may not be great because there already is a trend away from this solid fuel to automatic heat. The Dominion Bureau of Statistics yearly sample survey shows that the number of households heated with coal in the two provinces decreased annually by about 66,000 households during the past three or four years, and there was a parallel yearly decrease of some 30,000 households that used wood as the principal heating fuel. Gas is expected to obtain a considerable share of the future

conversions in the service area that otherwise might have been obtained by oil. Gas will also capture a rapidly increasing portion of the fuel requirements of new homes being constructed in the service area.

The additional 120 billion cubic feet of gas for industrial use will be sold almost wholly to customers who otherwise would use oil and coal. As used here, the term "industrial" includes manufacturing and mining, but not transportation and electric power generation.

In accordance with the suggestion of the Chairman, in our projections we have used the current ratio of oil and coal used by industry as a basis for apportioning the effect of sales of Trans-Canada gas between the two other major fuels. In 1956, the latest year for which complete data are available, industry in Ontario used those fuels in the ratic of 4 for coal to 1 for oil; in Quebec, on the other hand, industrial use of the two fuels was almost evenly divided in a 1 to 1 ratio.

Of the 193 billion cubic feet of gas supplied by Trans-Canada, in 1962-63 in competition with other fuels in Ontario and Quebec 107 billion cubic feet will be directly competitive with oil for residential, commercial and industrial uses, equivalent to 18 million barrels of oil, or about 49,000 barrels daily. Based on usage in 1956, kerosene, stove oil and light fuel oils would account for 12 million barrels, or 34,000 barrels daily, and heavy fuel oil for 6 million barrels, or 15,000 barrels daily.

No attempt is made here to estimate the extent to which the division of markets between distillate fuel oil and gas might affect refining production in the Ontario or Quebec refining areas in 1963. Trends in the relative position of the oil refining in the two provinces have been the subject of considerable testimony before the Commission. However, the 13 million barrels of light oil fuels involved would be considerably less than the growth in consumption of such fuels in the two provinces from 18 million barrels in 1951 to 39 million barrels in 1956.

The 8 million barrels of heavy fuel oil that would yield to gas are below the gain in demand for such oil for industrial and heating uses from 9 million barrels in 1951 to 18 million barrels in 1956. Total usage of heavy fuel oil for all purposes in the two provinces amounted to 32 million barrels in 1956 and 35 million barrels in 1957.

It may be of significance to the Commission that Ontario refineries in 1957 refined only 42 per cent of the heavy fuel oil consumed in the province although they met 65 per cent of the domestic gasoline demand. Further, Quebec and Ontario together imported more than 2,900,000 barrels of heavy fuel oil from foreign countries in 1957. These facts are significant to the subject under consideration. First, they recall the fact that oil products prices are not favourable to production of a high yield of heavy fuel oil from Canadian crude oil, at least East of Lake

Superior, even when there is a potential market near the refineries. Secondly, they indicate that under present conditions the initial impact of any relative, or possibly temporary absolute decrease in demand for heavy fuel oil in Ontario and Quebec might be to reduce imports of heavy fuel oil. There could also be a decrease in the volume of heavy crude oil imported to refineries in the Montreal area. Whether or not any prospective "displacement" of heavy fuel oil by gas in Ontario or Quebec would, under any foreseeable circumstances, be likely to reduce the demand for Canadian crude oil to a perceptible degree is a question that could be readily determined.

The estimated sale of the balance of 86 billion cubic feet of gas will be to industry in competition with coal, equivalent to approximately 3.3 million tons of that commodity. Of that amount, some 650,000 tons would be in the Province of Quebec, where total industrial coal consumption in 1957 was more than 2,700,000 tons. The remaining 2,650,000 tons would be displaced in Ontario, where all but a very minor part of the coal must be imported from the United States.

As a further means of showing the competitive fuel situation in perspective, both historically and in the future, tables are attached which indicate that even with gas gaining rapidly, heating oil should still have room for a good rate of growth during the next five years. In this connection, it is noted that in the projections it has been assumed that all of the

gas sold for residential and commercial uses would come out of sales which might otherwise have gone to oil. Actually, a substantial portion of the sales of gas for such uses will be to new homes and establishments, with much of the balance coming from conversions of existing coal users.

In estimating total residential and commercial requirements for oil, gas and coal, we have used the same rates of population growth and per capita usage of oil, coal and gas that prevailed in recent years. In estimating growth in total industrial fuel requirements, we have considered the report to the Royal Commission on Canada's economic prospects (Canadian Energy Prospects, p.306) which suggests a long term average rate of increase of 4.3 to 4.5 per cent a year. We have used a slightly lower rate of increase for the projection in 1962-63.

ONTARIO

OIL, COAL AND GAS FOR INDUSTRIAL USE

A - Quantities

	1951	1952	1953	1954	1955	1956	1957	1963
FUEL OILS (000 Barrels)								
Kerosene, etc.	405	50	58	56	81	567		
Light Fuel	941	1,690	978	1,746	1,746	2,403		
Sub-total	1,346	1,740	1,036	1,802	1,827	2,970	N.A.	3,000
Heavy Fuel	5,235	4,010	5,011	6,092	7,747	8,104	N.A.	9,000
TOTAL OIL	6,581	5,750	6,047	7,894	9,574	11,074	N.A.	12,000
COAL AND COKE (000 Tons)								
Industrial Deliveries	8,811	8,922	9,970	8,917	9,973	10,775	11,056	11,000
GAS (Billion c.f.)	1.7	1.9	2.1	2.2	3.4	5.1		99.7

B - Billions of c.f. Natural Gas Equivalent

FUEL OILS								
Kerosene, etc.	2.3	0.3	0.3	0.3	0.5	3.2		
Light Fuel	5.5	9.8	5.6	10.1	10.1	14.0		
Sub-total	7.8	10.1	5.9	10.4	10.6	17.2	N.A.	17.6
Heavy Fuel	33.0	25.3	31.6	38.4	48.8	51.1	N.A.	52.1
TOTAL OIL	40.8	35.4	37.5	48.8	59.4	68.3	N.A.	69.7
COAL AND COKE								
Industrial Deliveries	229.0	232.0	259.2	231.8	259.3	280.1	287.5	285.8
GAS	1.7	1.7	2.1	2.2	3.4	5.1		99.7
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ONTARIO

OIL, COAL AND GAS FOR DOMESTIC AND COMMERCIAL USE

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	1951	1952	1953	1954	1955	1956	1957	1963
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GAS (Billions c.f.)	8.7	9.7	10.9	12.3	18.5	22.9		94

B - Natural Gas Equivalent in Billions c.f.

FUEL OILS								
Kerosene, etc.	11.7	14.0	15.5	19.9	18.0	19.1		
Light Fuel	50.3	60.4	66.8	84.1	97.3	115.2		
Sub-total	62.0	74.4	82.3	104.0	115.3	134.3	N.A.	203
Heavy Fuel	5.5	7.7	7.4	8.7	11.7	11.7	N.A.	16
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QUEBEC

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GAS (Billions cu. ft.)	1.0	1.0	1.0	1.0	1.0	1.1		35.0

B - Billions of c. f. Natural Gas Equivalent

FUEL OILS								
Kerosene, Etc.	0.3	0.4	0.4	0.3	0.6	0.8		
Light Fuel	4.9	7.0	5.0	5.4	7.4	7.6		
Sub-total	5.2	7.4	5.4	5.7	8.0	8.4	N.A.	8.2
Heavy Fuel	25.1	26.1	37.2	44.6	54.6	63.0	N.A.	61.0
TOTAL OIL	30.3	33.5	42.4	50.3	62.6	71.4	N.A.	69.2
COAL AND COKE								
Industrial Deliveries	77.3	74.5	63.0	61.6	63.5	71.8	63.5	69.5
GAS	1.0	1.0	1.0	1.0	1.0	1.1		35.0
TOTAL	108.6	109.0	106.4	112.9	127.1	144.3		173.7

QUEBEC

OIL, COAL AND GAS FOR DOMESTIC AND COMMERCIAL USE

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Heavy Fuel	1,705	1,884	2,253	2,444	2,749	2,720	N.A.	3,000
TOTAL OIL	9,154	10,231	11,136	13,900	15,286	17,161	N.A.	25,000
COAL AND COKE (000 Tons)								
Retail Deliveries	1,607	1,499	1,288	1,197	1,171	1,140	983	575
GAS	3.5	3.6	3.8	3.9	3.9	4.1		25

B - Billions of c.f. Natural Gas Equivalent

FUEL OILS								
Kerosene, etc.	17.2	19.3	19.3	24.2	22.9	23.6		
Light Fuel	25.6	28.7	31.8	40.7	49.4	59.6		
Sub-total	42.8	48.0	51.1	64.9	72.3	83.2	N.A.	128
Heavy Fuel	10.7	11.9	14.2	15.4	17.3	17.1	N.A.	22
TOTAL OIL	53.5	59.9	65.3	80.3	89.6	100.3	N.A.	150
COAL AND COKE								
Retail Deliveries	41.8	39.0	33.5	31.1	30.4	29.6	25.6	15
GAS	3.5	3.6	3.8	3.9	3.9	4.1		25
TOTAL	98.8	102.3	102.6	105.3	123.9	134.0		190

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Exhibit 7-22-5

TRANS-CANADA PIPE LINES LIMITED

Comparison of ERC-SRI Market Estimates for Ontario and Quebec with Forecasts by Four Large Franchised Distributors

In Section II of the final report submitted by Alberta & Southern Gas Company Limited to the Royal Commission on Energy, the Economic Research Corporation - Stamford Research Institute show under Table 1 their estimates of the annual firm gas requirements of distributors in the areas of Canada served by Trans-Canada Pipe Lines Limited. In Table 3 ERC-SRI gives estimates of gas sales classed as interruptible for the Canadian market served.

The ERC-SRI estimate of markets for Ontario and Quebec is the sum of the volumes in Table 1 for the areas 1 to 4 inclusive. The interruptible sales for Ontario and Quebec are not readily derived from Table 3 and so the volumes shown for the whole of Canada were assumed as Ontario and Quebec sales in order to arrive at the total ERC-SRI estimates for Ontario and Quebec.

The attached summary compares ERC-SRI market estimates as developed for Ontario and Quebec with the latest forecasts made by the four large franchised distributors in Ontario and Quebec, namely, Northern Ontario Natural Gas Company Limited, Union Gas Company of Canada Limited, Consumers' Gas Company and Quebec Natural Gas Corporation.

For each of the five contract years beginning with November 1st, 1958 to November 1st, 1959 year, the distributors' forecasts are shown individually and as a total opposite ERC-SRI estimates of annual firm plus interruptible sales.

It will be noted that in all years the distributors forecast larger requirements than ERC-SRI and the fifth year requirements exceed ERC-SRI estimates by approximately 51,000 Mmcf.

Also listed are these distributors' take or pay for volume commitments under contracts already in existence, which show the distributors have contracted to take or pay for in the fifth year only 11,000 Mmcf less the ERC-SRI estimates. If the fifth year take or pay for commitments of the other Ontario distributors - Lakeland Natural Gas Limited, Kingston P.U.C., Augusta Natural Gas Limited - are considered, this 11,000 difference is wiped out.

This summary also demonstrated the relationship between distributors' annual requirements as forecast by T.C.P.L. in Submissions to the Royal Commission on Energy and the distributors' own forecasts. For the five contract years from 1958 to 1963 the distributors estimate a total requirement of approximately 752,000 Mmcf. Firm requirements anticipated in Trans-Canada's Royal Commission Submission total 706,000 Mmcf approximately.

Conclusions:

It is evident that the major distributors expect greater sales in Ontario and Quebec than ERC-SRI estimate and in fact exceed Trans-Canada's market forecasts of growth in the first five years of development.

It is Trans-Canada's submission that ERC-SRI estimates of market requirements are unreasonably low and this position is supported by distributors' forecasts.

SUMMARY CF COMPARISON OF ERC-SRI MARKET ESTIMATES FOR ONTARIO AND QUEBEC WITH FORECASTS OF FOUR LARGE FRANCHISED DISTRIBUTORS

	1/ FRANCHISED DISTRIBUTORS				TOTALS			TOTALS	
TCPL Contract Year	2/ Northern Ont. Nat. Gas Co. Mmcf	4/ Union Gas Co. Mmcf	5/ Consumers' Gas Co. Mmcf	6/ Quebec Nat. Gas Corp. Mmcf	Distributors' Forecasts Mmcf	7/ ERC-SRI Estimates Mmcf	Distributors' Take or Pay Volumes Mmcf	Sales Volumes Expected from Existing Firm Contracts	8/ TCPL Royal Commission Submission Distributors' Annual Requirements Mmcf
1958-59	29,943	-	31,481	17,574	98,998	75,800	58,046	64,854	74,434
1959-60	36,398	15,375	40,461	34,684	126,918	103,400	87,285	103,861	111,287
1960-61	3/ 42,700	18,375	49,439	45,459	155,973	119,600	114,227	136,221	150,532
1961-62	3/ 49,300	21,000	57,925	54,039	182,264	137,300	130,312	157,230	176,850
1962-63	55,681	24,000	66,083	62,549	208,313	157,400	146,139	166,068	193,502
Totals	214,022	78,750	245,389	214,485	752,466	593,500	536,009	628,234	706,605

1/ Ontario distributors such as Lakeland Natural Gas Limited, Kingston P.U.C., and Augusta Natural Gas Limited not shown.
2/ Volumes developed from max. day demand at 90% load factor, as contained in N.O.N.G. Submission to Royal Commission on Energy.
3/ Not available, assumed from trend.
4/ Schedule 8 of Union Gas Company of Canada Limited Submission to Royal Commission on Energy.
5/ Exhibit 1 page 10 of Consumers' Gas Company Submission to Royal Commission on Energy.
6/ Table 1 of Quebec Natural Gas Corporation latest forecast.
7/ Sum of ERC-SRI estimated firm sales in Ontario and Quebec, plus ERC-SRI estimated interruptible sales all Canada served (Alberta and Southern Gas Company Limited Submission Table 1, page 15, and Table 3, page 17).
8/ Exhibit 5 of T.C.P.L. Submission to Royal Commission on Energy.

Exhibit M-22-9

A BRIEF

PRESENTED

TO THE ROYAL COMMISSION

ON ECONOMIC GROWTH AND NATURAL RESOURCES OF CANADA

BY

THE QUEBEC GASOLINE RETAILERS AND GARAGE OPERATORS' ASSOCIATION INC.

Gentlemen,

Preamble

The Gasoline Retailers and Garage Operators are the domestic outlets through which a major industry in the field of natural resources in Canada distributes its products and sells them at the consumer level. In this capacity the garage owners and gasoline retailers constitute an important segment of the petroleum industry.

It would appear therefore that the problems of those engaged in the direct retail sale of petroleum products fall within the terms of reference of the Royal Commission on Economic Growth and Natural Resources of Canada.

For this reason, we, who represent the Quebec Gasoline Retailers and Garage Operators' Association Inc. grouping a large proportion of retailers in Eastern Canada, feel that, in this brief, we are contributing to the welfare of the petroleum industry by drawing the attention of the Royal Commission to the numerous problems besetting our members.

As representatives of the gasoline retailers and garage operators of the Province of Quebec, we would like to point out the difficulties with which our members have to contend and to suggest remedies at the federal, provincial and municipal level in order to solve these problems.

These problems in the main stem from the relationship between retailers who are lessees of oil companies and independent operators with these same oil companies. To wit:

Price Wars

A great number of our members are lessees of oil companies while others are "independents". This has created a number of problems in the competition among which is the Price War.

These have started in Ontario but have been waged in rural areas of Quebec to invade eventually the large urban centres such as Montréal, Québec and Trois-Rivières, Sherbrooke, Granby, Drummondville, St-Hyacinthe, Joliette, St-Jérome, etc., etc., where gasoline is being sold at 34, and even 31 cents, per gallon at retail. The average Retailer's cost price for gasoline in Montreal is 40.6 cents.

Oil Companies have admitted --- and such statements have been reproduced in the press --- that in many cases they have subsidized their lessees in order to fight the lessees of other companies and the independents.

The principle of "discounts" to customers has always been denounced by the Association which believes that only superiority of service rather than artificial means should attract the customer.

It is debatable whether the independents or company lessees are the more guilty of this practice. But it is drawn to the attention of the Royal Commission that if companies were enjoined to desist from such practices as subventions to their lessees, the danger of price wars would probably be lessened if not altogether eliminated.

The Quebec Gasoline Retailers & Garage Operators' Association has no fixed idea on the method to accomplish such a desired end. But it would suggest to the Commission that a federal study of price structures in the retail sales of petroleum products be made, avoiding both the implication of price fixing or restraint of trade and the over-liberalization of price policies.

It might be found for instance that the legality of such subsidies may be doubtful in view of the fact that oil companies obtain certain relief from taxation at the federal level. This may raise the question of the propriety of such companies using their profits to engage in competition which, in our opinion, is not ethical. Moreover, we know that certain oil companies - through their marketing departments - have given birth to unfair practices in allowing discriminating cost prices to some retailers in a specific area, with no regard to the sale volumes.

LEASE OF STATIONS

While oil companies have established strong and useful programmes of training and instruction for their lessees in the retail field, still over 40% of garage owners and gasoline retailers have failed in Quebec in the past year.

This does not alter the fact, however, that the ruin of many a lessee has been caused, we believe, by the desire of oil companies to establish prestige and product identification by the construction of many service stations and the distribution of their products by independent retailers which either were not necessary for the needs of the locality or were competing unduly with the lessees of the same company in the same neighbourhood.

A United Press news dispatch on a report published by the Canadian Bureau of Statistics, on June 25, shows an increase of almost 12 per-cent in business failures for 1957 over the 1956 figures.

This official report states that filling stations topped the list of bankcrupt businesses in the Province of Québec, in 1957.

LEASES TO NUMEROUS OPERATORS

In spite of the training and directives and courses given by oil companies and referred to earlier, it remains in the opinion of the Association that too many outlets have been set up.

We feel, gentlemen, that these practices - too many outlets, price wars, etc., - have a common ground in the intention of oil companies to establish their name and prestige at all costs, regardless of the dangers which confront the economic stability of the oil retail industry.

Knowing that we, in Canada, enjoy "the greatest known oil reserve on the face of the earth", according to Canada Year Book, we are sure that the Royal Commission on Economic Growth and Natural Resources of Canada will see that the best interest of the Canadian people be served in preparing a report that will protect the industry as well as the retailer, and consumer.

CONCLUSION

May we state in closing that our problems have already been submitted to the Provincial Government in December 1957, when a 300 member delegation of the Association was received at Québec by the Premier and his ministers. We were told that the Québec government was sympathetic to our difficulties, but that remedies, in the whole, fell within the jurisdiction of the Federal and Municipal authorities. We clearly understand that the control of the petroleum industry is not the responsibility of the provincial government, and we therefore have felt necessary to present to the Royal Commission on Economic Growth and Natural Resources of Canada the problems confronting our Association and the welfare of our members in the Province of Quebec.

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